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ENVS 410: Environmental Science Practicum  
Final Project

# Energy Descent in Arcata: A Guide to Plan for Peak Oil

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## Problem Statement

*The City of Arcata is reliant upon many types of non-renewable energy.*

## Background

Located approximately 275 miles north of San Francisco, California, the City of Arcata is reliant upon many types of non-renewable energy. Foremost among these energy dependencies is access to petroleum that is both cheap and readily obtainable. Practically all goods and services that Arcata residents use in their daily lives rely on oil for their transport or manufacture. Many products that were once produced on a local level have been replaced with cheaply produced goods made in foreign countries where regulations on environmental pollution and labor rights are low or nonexistent.

As oil availability declines, prices for practically all goods and services will increase. The community of Arcata will be forced to reconfigure itself around the principles of frugality, local production, and cooperation. It is thus necessary to create an Energy Descent Action Plan to help guide the City of Arcata towards greater self-reliance.

Fortunately, Arcata is situated in an area rich in resources. The ample amount of rainfall and relatively mild climate has made for fertile agricultural land that has the capacity to provide for virtually all of Arcata's food needs. Furthermore, indigenous knowledge from such tribes as the Karuk, Yurok, and Wiyot can augment traditional Western views on how to best utilize local natural resources. There are also a variety of local organizations, both private and public, that can aid Arcata in the transition to a more localized economy.

The Arcata city government has many resources that can help the city to become more self-reliant in the wake of declining world oil supplies. For example, the Community Greenhouse Gas Reduction Plan (CGGRP) references current and past energy statistics for the City of Arcata. However, the CGGRP lacks both the breadth and enforceability necessary to create a highly energy-independent community. Additionally, while the City of Arcata has many supportive services and departments, there is no one office or committee that is overseeing the development of creating a more self-reliant energy infrastructure. The creation of an effective Energy Descent Action Plan (EDAP) will institutionalize the support of governmental and local community groups in order to implement the EDAP.

The economic future of Arcata is uncertain. The relative remoteness of the city from a major commercial port makes importing goods and services into Humboldt County both difficult and expensive. Additionally, the City of Arcata's economy is not diversified. Arcata has businesses centered on lodging, merchandise, and food that rely on travelers and tourists as a major source of revenue. The major employer of Arcata residents is Humboldt State University, which is located within the city limits of Arcata. The other major employers of Arcata residents are the local hospital and federal, state, and county governments. Many Arcata residents work outside of the Arcata city limits; conversely, many people who reside in surrounding cities work in Arcata. This fact illustrates the economic dependence of Arcata on neighboring cities such as Eureka, McKinleyville, and Willow Creek.

*It has a number of small manufacturers.*

According to the most recent U.S. Census, there are approximately 17,000 individuals currently residing in the City of Arcata. "Arcata is growing slowly in relation to the rest of California. The Arcata Housing Element projects that Arcata will grow from a population of 16,651 in 2000, to 18,529 by the year 2020 – an increase of a little over 11 percent." (AEDSP 2004-2009) While the intra-city population of Arcata is relatively small, affordable housing is still a major issue. As of 2003, only fourteen percent of Arcata residents could afford to buy a home within the city limits. A household income of approximately \$80,000 is required to purchase a median-priced home in Arcata. The fact that the median income of Arcata households is \$22,000 suggests that affordable housing should be a major focus of the Energy Descent Action Plan.

more recent data is easily available

At present, transportation of both people and goods between the various population hubs surrounding Arcata occurs via truck or car. The dispersion of the county's population has made it difficult to implement an effective mass transit plan that adequately serves the needs of the Arcata community. Currently, the Arcata and Mad River Transit System (A&MRTS) provides hourly commuter bus service around the Arcata vicinity. The Redwood Transit Authority offers semi-regular bus service as far south as Fortuna, as far north as Trinidad, and as far east as Willow Creek. The only other mass transit in Humboldt County is the Eureka Transit Service, which provides hourly public transportation within the Eureka municipality. Given these limited figures, reliable transportation will become a major issue for the city in the post-oil future.



## Goals and Objectives

To assist in the creation of a strategic plan that incorporates all of the above elements, we crafted goals and objectives to implement our project; implementation strategies and timelines; and considered alternative avenues of success that another group may choose to pursue at a later date.

### Goals

- To provide a base of information for an individual or organization that could be a starting point for considering what actions should be taken to prepare for impending fossil fuel scarcity.
- To include this context/base of information in a document by May 7<sup>th</sup>, 2007.

### Objectives

- Review the Kinsale 2021 document by looking at the Table of Contents and reading over the various sections. Our group will then decide which sections of the Kinsale 2021 document most immediately have potential to assist in the transition from fossil fuel dependent culture to a more life-sustaining culture in Arcata, CA.
- Do general research on the sections that we choose to be relevant and realistic to research in our time constraint. Existing documents which the City of Arcata uses as guidelines for policy making and city policies will be examined and used with Internet research and correspondence with local intellectual authorities in order to gather information about the current context of fossil fuel dependence in Arcata.
- In examining the City of Arcata's policy documents individuals responsible for data and preparation of such documents will be found. While conducting research on our respective subjects, members of organizations and committees concerned with the issue of dependence on fossil fuel in Arcata will become evident. We should contact and consult these individuals whom can be included among appropriate sections so that in the future an individual or organization will know who to contact for details and ideas relative to their expertise regarding fossil fuel dependence.
- Contact with concerned groups and individuals will be made through email, by phone, or in person. Written comments to questions or verbal testimonial on subjects pertaining to the individual or group's expertise will be considered and included, where appropriate, in our final report.
- To ensure that we successfully create a base of information pertaining to Arcata and fossil fuel dependence, the breadth of our research will cover what data exists presently in city policy documents pertaining to the use of fossil fuel and how Arcata could use reduce its dependence on them.
- Using the aforementioned measures, provide an overview of past events that have led to the current situation.

*These include much of "how" objectives are what will be accomplished. Thus, each could be shorter*

- Using the aforementioned measures, provide an overview of the current situation.
- Craft "future vision" statements composed of options for actions that would help to wean Arcata, CA, from oil dependence.
- Our document must include the<sup>of</sup>fore mentioned research, and information from prominent local organizations and committees to establish credibility of our document.
- Present our plan to relevant persons or organizations such as the Humboldt Peak Oil Action Group (POAG) and the City of Arcata Energy Committee (AEC) with the intention of having this effort furthered by these organizations.
- Ultimately, our success would be indicated by a reputable organization, such as the POAG or AEC, using our document as a starting place to expand upon our research and to begin an investigation as an organization into options for ending fossil fuel reliance in Arcata.

## Implementation Strategies

We decided that of the seventeen sections of the Kinsale 2021 Document eleven of the sections addressed issues relevant to gaining independence from fossil fuel. Because there are only three of us we decided that if any of the eleven section topics could be combined in to one section it would be wise for us to do so given our limited amount of time to complete our project. The sections that as a group we decided were most pertinent to Arcata gaining independence from fossil fuel are: Energy, Housing, Economics, Local Resources, Waste, and Transportation. Because tourism contributes to a large portion of Arcata's Economy and tourists must travel to get to Arcata, Tourism as a section would be considered in the Economy and Transportation Sections. The Local Resources Section of our document will include information about health care in Arcata and Marine Resources available to the city. The Local Resources Section will also examine what resources Arcata has available locally that are already being utilized or could be utilized to achieve independence from fossil fuel. As a group we decided that Noelle would be responsible for the Energy and Housing Sections of our document, Zach would be responsible for the Local Resources and Waste Sections, and Tim would be responsible for the Economy and Transportation Sections. There are five other sections required within our final project, those sections are: The Problem Background and Problem Statement, Our Goals and Objectives, Weighing Alternatives, Implementation Strategies, and A Monitoring and Evaluation Plan. These five other sections were delegated to different group members as was seen appropriate by group members. Following are the Group Timeline, or the deadlines internal to our group that were use to keep us on track, and our separate Implementation Strategies.

### Group Timeline

March 1 <sup>st</sup> :	Problem Background and Problem Statement Due
March 8 <sup>th</sup> :	Goals and Objectives <ul style="list-style-type: none"><li>- Tim will craft the first draft</li></ul>
March 27 <sup>th</sup> :	Contact list of possible interested parties compiled
March 29 <sup>th</sup> :	Weighing Alternatives section due in class <ul style="list-style-type: none"><li>- Tim: Preferred Alternative and Alternative D</li><li>- Zach: Alternative C</li><li>- Noelle: Alternative B and final compilation document</li></ul>
April 3 <sup>rd</sup> :	Complete implementation strategies for each group member sent to Noelle
April 5 <sup>th</sup> :	Contact all contacts and discuss monitoring and evaluation
April 8 <sup>th</sup> :	Review Noelle's compilation of implementation strategies
April 10 <sup>th</sup> :	Implementation Strategies due in class
April 22 <sup>nd</sup> :	Draft sections due for review
April 24 <sup>th</sup> :	Write Monitoring and Evaluation Plan; comment on draft sections
April 26 <sup>th</sup> :	Monitoring and Evaluation Plan due in class
May 5 <sup>th</sup> :	Final sections due to Noelle for compilation
May 7 <sup>th</sup> :	Final paper due
May 7 <sup>th</sup> :	Create presentation
May 9 <sup>th</sup> :	Practice presentation
May 10 <sup>th</sup> :	Give presentation



## Individual Implementation and Strategies

**Important note:** Each group member chose a different strategy to implement our sections, and each of the following examples illustrates this difference. We chose to complete our project this way because we each had a different idea of the best way to finishing our sections, and we thought that providing a critical analysis of these strategies would be useful to whatever organization continued the project. Therefore, this section should be read with the understanding that the methods were not meant to be uniform, and each section is very specific to the author.

### Economics and Transportation – Tim Dower

To initiate the process of implementing our goal I researched the “Peak Oil” Theory and “Energy Descent”. This research will be done so that I will have an understanding of what issues are relevant to “Energy Descent” in Arcata. As a group we will decide which issues and resources, in our opinion, are most immediately important to address. Once a list of immediately important issues and resources is compiled, as a group we will choose the issues and resources of most immediate importance to Arcata. Our group will equally divide the subjects to research. Research on Economics and Transportation of Arcata will investigate the current status of these subjects and what possible options exist to further progress of “Energy Descent” in Arcata. The Arcata General Plan, the City of Arcata Economic Strategic Development Plan, and other related documents will be studied to gauge what current actions are being taken in the city and what it plans for the future of Arcata’s Economy and Transportation.

As a group we will identify which locally active organizations and individuals to pursue as sources of information. We will also consider who could use the information we have compiled as a starting point for further research and consideration of “Energy Descent” in Arcata. Once the scope of these issues is understood a conclusion with a “Vision” Statement will be offered that will suggest some possible actions which could be made to improve the status of the Economy and Transportation of Arcata in relation to “Energy Descent”. Research and the “Vision” Statement will be formatted into concise sections and compiled with all other research and “Vision” Statements composed by the other two members of the group. The final compiled document would, hopefully, be used by an organization or individual to further research and consider “Energy Descent” of Arcata.

### Local Resources – Zachary Mermel

As stated in earlier sections, the nature of our class project requires that we create an actual document by the end of the semester. In terms of implementing this strategic plan, however, such an endeavor is beyond the scope of a one-semester course. Thus, much of the implementation work will need to take place in the ensuing months and years after the strategic plan has been created.

However, there are certain activities that can take place this semester that will help to ensure the success of this relocalization project in the future. For example, we can inform certain influential members within the Arcata community of the aims of our project. To this end, I have been conducting interviews with various leaders involved in the conservation and preservation of Arcata’s local resources. These interviews have provided a sizeable amount of baseline information on the current condition of these resources. Additionally, during these interviews, I have been asking the



interviewees to describe their vision for how Arcata can become more self-reliant in the years ahead. These interviews will hopefully encourage these local community leaders to participate in the creation of the Arcata Localization Plan.

The preferred strategy for ensuring local community involvement is that a particular group will spearhead the creation of the Arcata Localization Plan. However, given the currently disparate nature of these different resource areas, initially it may be best to create a task force that will perform a feasibility study for each of the local resources areas. Each of these studies will be one year in duration, in order to ensure that an appropriate amount of data is collected. These feasibility studies will consist of qualitative interviews, questionnaires, and quantitative baseline assessments. After these feasibility studies have been conducted, the implementers of the various portions of this Arcata Localization Plan will have a better sense of how to successfully achieve their respective ends. Following is a timeline for performing these different feasibility studies.

### Waste

Sept 2007-Aug 2008                      The ALP-Waste task force, in partnership with the City of Arcata, the Arcata Community Recycling Center, Mad River Compost, and Humboldt State University, will conduct a feasibility study to determine the amount of Arcata's waste that could be processed and utilized within Humboldt County

### Marine

Sept 2007-Aug 2008:                      The ALP-Marine task force, in partnership with the Humboldt Bay Harbor, Recreation and Conservation District and Humboldt State University, will conduct a feasibility study to determine the amount of food that could be sustainably produced from within Arcata Bay, Humboldt Bay, and the surrounding Pacific Ocean.

### Agriculture

Sept 2007-Aug 2008:                      The ALP-Agriculture task force, in partnership with local community-supported agriculture programs, the UC Cooperative Farm Extension, and Humboldt State University, will conduct a feasibility study to determine the amount of land in the immediate vicinity of Arcata that would need to be devoted to the sustainable production of food in order to properly feed Arcata residents.

### Water

Sept 2007-Aug 2008:                      The ALP-Water task force, in partnership with the City of Arcata the California Water Quality Resources Board, and Humboldt State University will conduct a feasibility study to determine whether rainwater catchment systems on residential and commercial buildings are a viable alternative to water supplied by the City of Arcata.

### Health

Sept 2007-Aug 2008: The ALP-Health task force, in partnership with Mad River Hospital, the Arcata Endeavor, and Humboldt State University, will conduct a feasibility study to determine how indigenous knowledge about local herbology, combined with preventative health measures, can help to promote physical health within the Arcata citizenry.

### Timber

Sept 2007-Aug 2008: The ALP-Timber task force, in partnership with the City of Arcata, the Institute for Sustainable Forestry, the Humboldt Watershed Council, Humboldt State University, and various local forest products companies, will conduct a feasibility study to determine the amount of forest products that could provide for the needs of Arcata residents and businesses.

### Other important dates on the ALP Timeline

May 1<sup>st</sup>, 2007 Present the Arcata Localization Strategic Plan to the Humboldt Peak Oil Action Group.

June 2<sup>nd</sup> and 3<sup>rd</sup>, 2007 Conduct a two-day community-wide Strategic Planning session to determine how best to create a Localization Plan for the City of Arcata.

### **Housing – Noelle Melchizedek**

There proved to be a rather complete, if slightly outdated, document from which to garner information about Housing in Arcata. The City of Arcata Housing Element 2003 and Housing Element Technical Index are both comprehensive documents containing current statistics about housing. Analyzing these reports will take time, as will contacting interested officials regarding EDAPs and what can be done to ensure they are informed of what local resources exist. Since I am also doing in-depth interviews with certain individuals regarding the Energy section, this section will mostly be the present conditions and some hypothetical scenarios for the future.

### **Energy – Noelle Melchizedek**

The strategy used for the Energy component of our project was different than any other component. My individual strategies for this section is how I had envisioned the entire project being completed; however, as there was disagreement within our group as to what was both possible to complete with the time we had and which strategies were best, I chose to use the following format:

#### Strategy #1

Research what the current energy situation is here in Arcata.

#### Implementation #1



To do this, I have talked with several people as well as researched online. The City of Arcata website has been particularly helpful.

#### Strategy #2

Formulate a contact list of people who are involved with Arcata's Energy Committee, as well as organizations such as the Redwood Coast Energy Authority.

#### Implementation #2

Contact each person on the list, as well as others that come up in discussions. Interview them on a) current energy initiatives in Arcata b) knowledge of EDAPs c) viewpoints on local sentiment regarding energy and EDAPs and d) their vision for what is possible in Arcata in regards to Energy. Notes are included Appendix B in this document.

#### Strategy #3

Research what current initiatives exist and compare them to what would be included in an Energy Descent Action Plan. I determined that it is logical to pursue current initiatives into which we could include Energy Descent Action Plan ethos rather than attempt to create parallel efforts.

#### Implementation #3

After finding which current initiatives are applicable, I have begun to analyze them and pursue further suggestions. Such initiatives include:

1. Community Greenhouse Gas Reduction Plan: this plan in particular has several local initiatives that are applicable. I am analyzing this plan and will include further suggestions so that energy descent can easily be taken into consideration, not just the reduction of greenhouse gases.
2. Green building initiatives: through my conversations with people active within the community, it appears that there is a push to have local regulations, building codes, and education programs formed to promote green building.

#### Strategy #4

Cohesively present what there is currently and what is feasible in the future.

#### Implementation #4

Create a future vision statement with initial suggestions that appear feasible to reduce Arcata's dependence on outside, non-renewable energy sources.

### **Critical Analysis**

Like many other efforts on this project, the timeline was the most restrictive factor to the success of this strategy. Overall, the interviewing portion of this assignment (Strategy #1) was the most helpful and informative, as well as the most enjoyable. In order to begin disseminating what an EDAP is, face-to-face conversations proved most fruitful for me. While our project became one where we studied what currently exists in Arcata, the original intention was to create a strategic plan for Arcata in regards to energy descent. Therefore, my interviews focused more on what different individuals saw as the current situation and also their vision for the future. Also, interviewing people directly gave me an opportunity to thoroughly explain what an EDAP is and why this information is useful to them. If I could revisit this project and choose a different way of implementing it, I don't think

that I would. I believe that on the ground conversations are necessary to convince people this type of project is needed and can be implemented here.

## Weighing Alternatives

Following are several alternatives our group considered for our project. Each was weighed carefully and discarded for different reasons, although any one of them is perfectly feasible to contribute to the successful formation of an EDAP. Constraints, strengths, weaknesses, and the feasibility of the option are considered for each alternative.

### Alternative A

*Bring interested persons or organizations together to create a committee that is comprehensive in membership to create an Energy Decent Plan.*

This alternative could take the form of a governmental committee or an independent committee. The membership would be of people who have expressed interest in creating an Energy Descent Plan for Arcata and who are knowledgeable about the issues necessary. In order to find these people, our group would have begun by contacting known activists in the community and also government officials to educate them about Peak Oil and Energy Descent Plans and also to see the worth of investing in this idea. This alternative is the next best option to our preferred alternative. It would have met the goal of forming some sort of solution to our problem statement by recognizing Arcata's reliance on non-renewable energy and by creating the beginnings of an Energy Descent Plan. If the committee were to be governmental, it would require the collaboration of the city and the creation of formal guidelines to be followed.

### Strengths

- The idea of an Energy Descent Plan would be put out to a large number of people, and information regarding such would be disseminated throughout the organizations the committee members would represent.
- People who could implement the plan would potentially be involved.
- This alternative could inspire large scale collaboration within the community, especially since Energy Descent Plans are so comprehensive.
- If people are committed to this committee, they will also have investment in the success of the Energy Descent Plan.
- The committee structure could potentially be institutionalized and therefore be more viable over the long-term.
- A division of labor would be created that would specify duties and increase the efficiency of creating the Plan.

### Weaknesses

- It is difficult to get people together, and since we would be asking people who are already involved locally, there may be difficulty finding committed members.
- It is difficult to facilitate dialogue in a concise manner.
- There would have to be significant educational campaigns and efforts to get people interested and invested in the worth of an Energy Descent Plan.
- It would be difficult to choose who could be involved and what size the committee should be; some groups may feel left out.
- Different members or organizations may have trouble reconciling which means to the end would be best suited to the project.

- Conflicting schedules may be a major block to success.

### *Feasibility*

It was not feasible to choose this alternative because it didn't come to our attention that this option was possible. Now there is not time in the semester for the three of us to bring all the stakeholders together and to actually implement a committee. We also felt that this option could turn into something that wouldn't be done specifically by us, and would take on a life of its own, thereby not meeting the requirements for the class. The main constraint was time.



## **Alternative B – Zachary Mermel**

### *Create a Humboldt County Strategic Plan for the Energy Descent Action Plan.*

Another way that our project could have manifested was for our group to create a strategic plan document for how the entire county of Humboldt can effectively respond to the dual issues of Peak Oil and Energy Descent. This document would have consisted of a list of local resources, characterized by municipality. It would have been relatively broad in scope, in order to account for the various geographical differences existing within the county.

There were a few key constraints that prevented us from utilizing this alternative for our project. The main reason for not opting for this alternative was that we came across this alternative at the mid-point of the semester; thus, it would have been impractical for us to attempt to create a strategic plan to guide the entire county in descending from Peak Oil in the seven weeks remaining in the semester. Furthermore, our original problem statement was geared around the non-renewable energy infrastructure of the city of Arcata, not Humboldt County as a whole.

### ***Strengths***

- This alternative would enable the physically and socially disparate towns and cities throughout Humboldt County to network with one other in order to effectively deal with the Peak Oil crisis.
- There would be a definitive Peak Oil Action Plan for the county as a whole
- The fact that the plan was for the entire county is based on the recognition that the North Coast should aim for self-reliance, NOT self-sufficiency. Many of the goods and services consumed by Humboldt County residents necessarily come from outside of the county
- It might be more realistic to craft a plan for the entire county because of the different climates in the north and south (especially regarding growing of crops)
- The Energy Action Plan would centralize the information needed for the entire county of Humboldt to effectively descend from Peak Oil
- Due to the plan's broader scope, a large variety of people would participate, potentially facilitating more creative solutions and at the same time ensuring that each community can create appropriate solutions to suit its individual needs

### ***Weaknesses***

- This alternative is not in line with the overriding issue delineated in our problem statement: The City of Arcata is reliant on non-renewable energy.
- The inherently decentralized nature of Humboldt County would make it difficult to create an effective energy action plan for the entire county. Thus, momentum could dissipate over time because of this scattered geography of people and resources.
- The scope of the Plan would only include Humboldt County, and thus not include outlying areas in neighboring counties that will also be impacted by the Peak Oil crisis

### ***Feasibility***

As stated earlier, the amount of time remaining in the semester would limit our ability to craft an effective plan for the entire county. It would be prohibitively time-consuming to research the resources (Plans, Natural resources, people, organizations) existing in the county in a mere seven weeks. Additionally, the political will might not exist within the county government to make this

plan happen at this point in time. Furthermore, certain citizens within the county might be less willing to work with us because, due to our status as college students, we might be seen as lacking credibility and experience. Along these same lines, it is exceedingly difficult to convince people that Peak Oil is worth planning for. It is impossible to determine which entity within the county would be the implementer of this plan.



## **Alternative C – Tim Dower**

*Lobby California State officials to mandate adding an Energy Descent Action Plan (EDAP) as an option to the General Plan of all cities and counties in California.*

Our campaign to influence the California State Legislature may have consisted of writing letters, sending email, and making phone calls to the appropriate state officials. By scheduling meetings with government officials we could, as a group, address our interest in adding the EDAP as an option. Informing relevant and related groups and individuals about what an EDAP is and why it is imperative that an EDAP be added as an option to California State county and city General Plans would help us garner support from established organizations, planning committees, as well as citizens and ensure that this legislative action is a salient political desire of the public.

Our goal of providing a base of information upon which an individual or organization could begin considering what actions should be taken to prepare for impending fossil fuel scarcity could be met if an EDAP is mandated to be included among the optional elements of California State, county and city General Plans. To create an EDAP research on what should be considered relevant issues must be completed. Issues that are considered relevant should be included in considerations when designing the EDAP. If an EDAP is mandated to be included among the optional elements of California State, County and City General Plans, awareness of the necessity for an EDAP in a General Plan will be raised. Communities that are interested in sustaining local resources and the Environment would be motivated to craft and implement an EDAP as part of their county or city General Plan.

There are constraints on this alternative that prevent it from meeting our goal. The EDAP would only be an optional element that may be included as part of a General Plan. As an optional element counties and cities may opt not to include the EDAP as an element of their General Plans. To lobby for an issue or policy change our group must be perceived as credible by policy makers. To be perceived as credible our group should have an established and respected political group that supports our cause. We would also need the support of several planners to ensure the success of designing and implementing an EDAP option. Another constraint on meeting our goal with this alternative is that those who are skeptical that fossil fuel scarcity will be a problem in the near future, including policy makers and influential groups and persons, have faith that humanity is ingenious especially when it comes to overcoming adverse situations which threaten the quality of human life we expect. The skeptics believe that technology will deliver the solution to our energy problem and therefore an EDAP is unnecessary. Lobbying for policy change could be an effective way of motivating data collection by counties and cities to begin preparing for fossil fuel scarcity.

### ***Strengths***

- Lobbying is feasible
- Would promote the idea to a much wider group of people
- Counties and Cities would be aware and possess the tools to prepare for fossil fuel scarcity.

### ***Weaknesses***

- The EDAP would be optional

- Our lobbying efforts would not have much clout, because we wouldn't have a powerful political group to fight for our cause, because we would have to garner support from planner.
- Faith in technology might predominate among both the politicians that we would be lobbying, as well as the planners who would be implementing the EDAP option.
- The plan potentially wouldn't be as comprehensive for the unincorporated cities because it would be created by the County, and not the city itself, if the process isn't inclusive

### *Feasibility*

This alternative is feasible for our group to pursue. However, our lack of time due to the brief nature of a semester limits our ability to mount an effective political campaign. As students our busy schedules make networking with others difficult due to schedule conflicts. Building credibility takes time. Intensive research would be required to have a comprehensive understanding of the dynamics of the problem. Networking with individuals and organizations is part of building a credible reputation. Both research and networking take more time than we have to pursue our goal.



## **Alternative D**

*Create an Energy Descent Action Plan that coincides with actions contained in Arcata's Greenhouse Gas Emissions Reduction Plan (CGGRP).*

For this alternative, we would analyze the CGGRP and write specific instructions on how it can be adapted into an EDAP. There are several recommendations within the CGGRP that fit well with what an EDAP attempts to provide. Once those sections that are applicable are identified, our group would meet with the City of Arcata Energy Committee to inform them of what energy descent is and how it fits into the CGGRP. Working with City officials, we would then re-craft the CGGRP to reflect energy descent and create a more focused effort to make Arcata self-sufficient.

Constraints to this alternative would be convincing City officials that this is even necessary, as initiatives within the CGGRP so easily correlate to energy descent already. In fact, the major constraint to choosing this alternative was coming to this realization too late.

### ***Strengths***

- City infrastructure already exists to implement the CGGRP and could be adapted to also implement an EDAP.
- Connecting the EDAP with the City of Arcata directly would mean less concern for turnover and the established body of the City would be able to retain institutional memory of what the EDAP is and hopes to accomplish.
- Buy-in exists for the CGGRP.
- The CGGRP was crafted for citizen participation, and an EDAP would need citizenry awareness and participation to succeed.
- We would be accessing a body of individuals that know each other and local resources available, and as they all work through one governing body, it may be easier to access City resources and knowledge.

### ***Weaknesses***

- The City of Arcata may not buy-in to EDAPs and may feel that the CGGRP is enough of a plan to compensate for this plan.
- Over the course of semester, we would have to meet very frequently to assure the success of attaching EDAP concepts to the existing CGGRP.
- As so much has already been invested in the CGGRP, people may not be willing to put in any more time for the project.
- Depending on who is elected when, the political climate may not be ripe for an EDAP inclusion into the CGGRP.

### ***Feasibility***

This option was not selected because the momentum for our project was already strong. We came to this realization too late in the semester. This option may be our next best, as the CGGRP really is comprehensive and could very easily be adapted into an EDAP. If we had thought of this alternative previously, we may have chosen its structure over our preferred alternative.

## **Preferred Alternative**

*Compile information relevant to designing a strategic plan for fossil fuel scarcity to accommodate Arcata, California.*

As a group we will contemplate which issues and resources are related to Arcata and fossil fuel scarcity. Once identified our group then will be able to research issues and resources related to Arcata and fossil fuel scarcity. By the end of the semester the information we have found and our conclusions about that information will be compiled in a document which could be used by an organization or individual to begin continued and more comprehensive research about the preparedness and adaptive possibilities of Arcata for fossil fuel scarcity.

Our goal of providing a base of information upon which an individual or organization could begin considering what actions should be taken to prepare for impending fossil fuel scarcity would be met by this alternative by completing a preliminary assessment of whether or not an energy descent plan is necessary for Arcata. This assessment will also investigate the feasibility of Arcata engaging in energy descent.

This alternative will be executed initially by considering issues and resources related to fossil fuel scarcity. Resources found to be pertinent to the energy descent of Arcata would be defined and researched by our group. Our preliminary contemplation and research on energy descent would allow an organization or individual to have an understanding of what "Peak Oil" means, how it relates to Arcata, and what options Arcata has to ease the burden of fossil fuel scarcity. By compiling information relevant to fossil fuel scarcity and Arcata, a base of information would be provided which could be used to prepare for impending fossil fuel scarcity.

Time is the major constraint on how comprehensive, and therefore how useful, this document is in the process of planning for fossil fuel scarcity. Due to the length of time in a semester our ability to complete thorough research is limited. By not being able to do thorough research the validity of our facts and conclusions may be questioned. Time also limits our efforts to establish connections and support from influential groups or persons. For our document to be used, awareness of its existence must be raised. The committees who might be interested in using our document do not meet frequently enough for our group to effectively address and inform them of our interest. Another time constraint is that established committees are already involved with working on other goals and it would take time to establish a relationship with them.

## **Strengths**

- Preliminary assessment of necessity and feasibility of Energy Descent in Arcata.
- Thought upon issues and resources related to fossil fuel would begin.
- Current conditions of fossil fuel dependence in Arcata would be examined and outlined.
- Local resources would be identified which could fulfill the need for and function of more energy-intensive options.

## **Weaknesses**

- Not county wide
- "Arcata General Plan" does not address energy descent in the Energy Element.



- The implications of fossil fuel scarcity are not commonly understood by the public.
- Some are skeptical of the validity of the “Peak Oil” prediction.
- Due to our small group size research must be limited.
- Does not generate public awareness.
- Our credibility could be seen as questionable.

### *Feasibility*

At this point in the semester, this alternative is the most feasible option currently available to us. As noted already, the fact that there are only five weeks remaining in the semester does not allow us the option of choosing another alternative for our project. That being said, it is feasible to create a strategic plan for the City of Arcata to use as a living document in order to deal with the growing scarcity of accessing fossil fuel resources. Each of our group members is compiling documentation from human resources and existing documents in order to accurately assess the current situation of fossil fuel reliance within the Arcata area. This is a task that can be feasibly accomplished by the end of the semester.

## Monitoring and Evaluation Plan

The nature of our project will require that another group continue to toward creating an Energy Descent Action Plan for Arcata once our portion of the work has been completed. Therefore, our Monitoring and Evaluation Plan reads similarly to a Future Vision section for our project. We did this purposely to encourage the next group to take this project on to adapt their vision to our plan. The Humboldt Peak Oil Action Group (POAG) is a group that focuses on Peak Oil and therefore it makes the most sense for them to follow these guidelines. This group is well-suited to facilitate the creation of an EDAP, but no expectation of commitment currently exists.

Any subsequent efforts toward oil independence for Arcata will be able to build off of the document we have created. The following timeline is suggested for this continuation.

### Year 1, beginning July, 2007

- July – August: POAG will create a scoping process that will identify stakeholder groups. These groups should have a vested interest in the project, decision-making power for any of initiatives put forth, and/or resources integral to the success of the project. This scoping process should include potential partnerships with the City of Arcata, non-profits, and Humboldt State University, as well as any other interested party.
- July – June, 2008: Comprehensive analyses
  - Different members of POAG will determine which sections they would like to work on and prioritize the timeline for this effort.
  - POAG shall conduct a more comprehensive analysis of the areas that are covered in our project, which include transportation, economics, resources, energy, and housing
  - POAG shall conduct comprehensive analyses on the following topics: food, education, youth and community, and health. Comprehensive analyses will include:
    - Existing resources and infrastructure
    - Determination of current initiatives that may be adapted to fit the EDAP model
- Each month: POAG should hold monthly meetings to monitor the progress of the analyses.
- June, 2008: At the end of this process, a community-wide forum will be held to present the findings.

### Year 2, July 2008

- July: Those focus groups will approach the appropriate organizations/committees/individuals not already involved to develop feasible initiatives for each topic stated above.
- July 2008 – June, 2009: Feasible Initiatives: feasible initiatives are those programs, mandates, incentives, and regulations that can be created to encourage self-reliance and energy independence for Arcata. Local resources, technological innovations regarding energy, and also reducing or dependence on oil imports should be the ethos for this effort.
- August 2008: Ad-hoc committees will be formed and other established entities should agree to commit to the creation of an EDAP by this time.
- August 2008: A timeline including EDAP Measures for each topic shall be formed outlining community actions that will be taken and who is responsible for implementing the measures.

- July 2008 - June 2009: Adaptive management practices and innovation should be encouraged to ensure that efforts and future goals are carried out in a realistic manner.

Further goals and timelines shall be established by the organization responsible for the creation of an EDAP. It is only feasible to plan for two years of activity at this time, as the creation of a comprehensive and plan capable of being implemented will take several years.



## Lessons Learned/Evaluation of Objectives

In hindsight, we would have begun the project earlier on in the semester and more closely examined the other options for conducting this project. A better understanding of what, exactly, our project would morph into between group members would have had us work more effectively. Undertaking the creation of an Energy Descent Action Plan (EDAP) requires a substantial amount of time to research and compile the relevant information for the Plan that is garnered from various organizations and individuals.

Creating an EDAP for Arcata proved difficult because we ourselves were not familiar with all the resources at our fingertips; in particular, the research component of assessing what documents and initiatives are currently in place took more time than was anticipated. Also, all three group members selected different implementation and strategy tactics to complete their portion of the project. This caused there to be inconsistent information gathered and presented in each section.

Our group dynamics could have been improved through clearer communication, as not all members were equally invested in this project. Expectations should have been made clear in the beginning as to the amount of work each individual would put into it, and what the repercussions would be for failing to follow through with assigned tasks. Unfortunately, not all of our group members were present to critically analyze how each of our implementation strategies were and were not effective; therefore, we were not able to make concrete suggestions as to how another group, such as the POAG, could effectively create an EDAP from our experiences.

As to whether we achieved our goal of creating a document that can be passed on to another group, such as the Peak Oil Action Group, is debatable. At the time this document was turned in and at the time the final document was compiled, the Economics and Transportation sections were missing. Therefore, the document appears incomplete and does not promise everything we hoped to achieve. We did not fully meet our objectives because of this section's absence. In the sections that were compiled into the final guide for Energy Descent for Arcata, we did meet our objectives and our goal. If the Economic and Transportation sections do get turned in at a later date, they will be included in the final report that will be sent to POAG. Also, the document has not yet been presented to the target group, the Peak Oil Action Group, as their next meeting isn't until June and this project is finished in May. Instead of a live presentation, we intend to present it via email, hopefully with the missing sections included.

A semester spent on one project seems to be too short of a time period to accomplish good social or environmental change, especially when it involves an entire community and requires a lot of buy-in. Reflecting back, it would have been more feasible to comprehensively examine just one section of an EDAP instead of taking on three or four. Also, many community members do not operate on a semester system; this creates difficulties for them as they may be expecting on-going commitment from students who will not be able to continue the work so recently begun.

As to the actual content of our final product, it remains a shallow understanding of a complex picture; although it also can be seen as a real beginning to a much larger and important project. We became acutely aware of how utterly dependent Arcata is on non-renewable resources, as well as the surrounding communities and government structure. We learned a great deal about our community and certainly extended ourselves well past the scope of HSU, a personal goal for two of us.

## APPENDIX A: Individual Time Tables

Noelle Melchizedek		
Task	Description	Hours
Interviews	I interviewed five people in regards to energy and Arcata and one in regards to Housing. Each interview was tailored to the person's position (for instance, interviewing David Boyd from RCEA was different than Michael Winkler from SHATZ). The time estimated also includes the amount of time necessary to summarize and type the interviews, to be included in the appendix.	24
Research	I researched the current situation in Arcata for Housing and Energy; this research included web research as well as reading technical documents. Much of the time not spent in the classroom when there were no lectures was spent on this.	35
Report Compilation	I was the report compiler for the Alternatives Section, as well as the implementation strategies, the final class paper, and the Strategic Plan for Arcata's Energy Descent Action Plan. These tasks together took several hours.	25
Individual Sections	Each section included in this report includes a component written by each group member. The time I spent on my individual sections (for example, my personal Implementation Strategies, Alternatives, etc, sections) is also included here.	10
Presentation	As our group has not given our presentation at the time this report is turned in, this is an estimation of time it will take to create, compile, and practice the presentation.	5
<b>Total</b>		<b>99</b>

### Zach Mermel's Timeline of Work on ENVS 410 Project

NOTE: The times denoted below reflect the more sizeable amounts of time that I spent working on the project. I would estimate that I spent an additional 20 hours throughout the semester reviewing drafts, preparing for interviews, and corresponding via email with group members, among other things.

<u>Date</u>	<u>Task</u>	<u>Time (hours)</u>
1/19	Created a personal timeline for project	0.5
1/30	Met with group to det. Goals/Objectives	2.0
2/1	Read Kinsale EDAP, WELL docs	3.0
2/5	Researched local food production statistics	2.0
2/6	Met with group to create draft of Problem Background/Statement	2.0
2/8	Created first draft of Prob Bkgrnd/Statm	2.0
2/13	Met with group to craft a Reverse Timeline	2.0
2/20	Worked on draft of Prob Bkgrnd/Statement	2.0
2/22	Met with group re: project's next steps	1.0
2/27	Revised Prob Bkgrnd/Statement	1.0



2/28	Interview with Susan Ornelas	1.0
2/29	Finalized draft2 of PB/Statm	2.0
2/30	Compiled Susan O. interview notes.	1.5
3/2	Researched agricultural stats in Hum Cty	2.0
3/3	Researched waste stats in Hum Cty	1.5
3/4	Met with group to work on goals/obj.'s	1.5
3/15	Interview with Mark Lovelace	1.5
3/16	Compiled Mark L. interview notes.	2.0
3/18	Interview with Mark Loughmiller	2.0
3/19	Compiled Mark Lo. interview notes	2.25
3/21	Researched waste disposal in Hum Cty	2.5
3/20	Met with group to discuss impl. strategies	1.5
3/23	Wrote first draft of impl. strategies	2.0
3/25	Wrote initial draft of Alternative 2	2.0
3/27	Improved upon draft of Alternative 2	3.0
4/1	Wrote suggested implementation strategies	2.0
4/2	Offered suggestions to group on Alt.'s	1.0
4/2	Rewrote draft of Alternative 2	1.5
4/3	Created a draft Table of Contents	1.5
4/4	Revised the draft Table of Contents	0.5
4/6	Wrote out thoughts for Mon/Eval plan	1.0
4/9	Proofread draft of Mon/Eval plan	0.5
4/18	Worked on draft of Resources section	2.5
4/21	Worked on draft of Resources section	3.5
4/22	Submitted draft of my section to the group	2.0
4/23	Helped to finalize Mon/Eval plan	3.0
4/25	Interview with Andrew Jolin.	1.0
4/28	Wrote draft of Intro section	2.0
4/29	Worked on draft of Local Resources section	5.5
5/1	Worked on draft of Local Resources section	4.0
	Worked on draft of Intro. & Conclusion	3.0
5/3	Worked on draft of Local Resources section	7.0
5/3	Worked on final draft of PB/Statement	2.0
5/4	Worked on draft of Local Resources section	5.0
5/5	Worked on draft of Local Resources section	8.0
5/6	Worked on draft of Local Resources section	3.0
5/6	Created outline for my part of presentation	2.0
5/6	Typed up this timeline of work	1.5
	<b>Total</b>	<b>108.5</b>



## APPENDIX B: Energy and Housing Interview Notes

### ENERGY

Michael Winkler, Schatz Energy Research Center, March 22<sup>nd</sup>, 2007

Winkler had heard about EDAPs from Richard Heinberg in the novel "Power Down". He is familiar with Peak Oil and is familiar with the Humboldt County Peak Oil Action Group.

Winkler feels that there are two main sentiments regarding Peak Oil: that either we have to go back to agrarian lifestyles or that the difficulties presented by Peak Oil can be overcome by technology. He stated that among activists, the sentiment may reflect the former.

He believes that if energy costs are high, people will expect the experts to handle it and that a technological solution will be presented.

He stated he believes the City Council will be generally supportive and will encourage both conservation and the use of renewables.

Winkler spoke of Community Choice Aggregation (CCA), which allows that either cities or counties can take over the supply or energy generation for a community. It allows for public control of priority setting and is through public political processes. PG&E will still bill and distribute the energy. He also mentioned municipal utilities. Winkler stated that Arcata may be too small to produce its own energy but that the County is working on this issue as well.

Winkler also spoke of the Humboldt County General Plan and that there are three options – A, B, and C. A incorporates recommendations for renewable; B requires less support from the County; and C retains the status quo. He stated it is currently before the Planning Commission.

Michael also said that, philosophically, energy consumption, as it is currently, is not possible long-term, and collectively we will not be able to use energy the way we have.

Other reports that have information on Peak Oil are the Hirsch Report commissioned by the Department of Energy; the SAIC conclusion that Peak Oil will occur; and the ACE report that major problems will occur with the peak of oil, natural gas, and coal.

Winkler does not believe that the political will is ~~not~~ very strong within the community at this time to create an EDAP. He stated that supporting the items in the Energy Element of the Humboldt County Energy Element will assist both Arcata and the County in preparing for Energy Descent.

Arcata's Greenhouse Gas Emissions Reduction Plan is not a policy but a statement of sentiment, according to Winkler. He stated it is not implantable because it should discuss energy consumption.

Winkler raised the question of how an EDAP accommodate country dwellers.

He stated that when creating an Energy Descent Action Plan, you have to guard against creating the perfect plan which has no chance of happening – people need to be realistic regarding human nature and political situations.

**Jim Zoellick: Schatz Energy Research Center, March 27<sup>th</sup>, 2007**

Zoellick stated that an EDAP would take years to complete. He stated that the sentiment may be that buy-in for an EDAP is not present and will be more of an on-going dialogue, planful and visionary. He stated that they will plan things for more near-term things. He stated that without motivation for a movement and as Peak Oil is not obvious in people's lives, creating an EDAP is not immediately feasible.

Current projects that are being worked on locally:

At the county level, the Energy Element of the general plan is being considered. It is optional to include this element, but there is governmental framework already involved. One issue with the energy element is that it is costly, ambitious, and deemed “not their responsibility” by decision-makers.

RCEA (Redwood Coast Energy Authority) is well-established but is without consistent funding. See the interview with David Boyd.

Plan It Green and Green Building – there is support from the building community. Arcata could be one if not the first to adopt a green building program. They are just starting to discuss future visions for housing and commercial and new construction retrofits in relation to green building.

Build-It Green is specific to residential and small commercial use and is a guideline for green building.

It was at this point that Zoellick stated that Humboldt County has enough renewable energy opportunities to meet its needs – but capture is a problem. Eventually Humboldt County could be energy independent.

Zoellick stated, “Green building won't work unless it's adopted on a broader scale”. There needs to be a high demand and service, otherwise local builders would have to cater to 2 consumer groups, at least.

On the current energy situation, Zoellick stated that PG and E run the show with electricity and natural gas, and that biomass is also used. He stated that SHELL Wind is working on a project on Bear River Ridge that may produce between 30-35 MW of electricity. He also mentioned a DG Energy project in Samoa using wave generators through PG and E.

As to the problem of Peak Oil, he stated that the problem should be more visible for the County to take action; he stated that major, visible crises would have to occur for it to be accessible.

Other people Winkler thought might be interested in EDAPs: David Boyd from the RCEA; Arne Jacobsen from HSU; Susan Ornelas, Susanne Simpson, Michael Welch, Dan Ihara, John Woolley and Jill Geist, Harmony Groves, and Steve Hackett.



**Moshe Krafchow, City of Arcata Energy Committee, March 28<sup>th</sup>, 2007**

Krafchow had never heard of EDAPs before. He began the interview by speaking on the Greenhouse Gas Emissions Reduction Plan. Krafchow stated the GGERP has goals and information, and gives a political mandate to act on. He stated it is comprehensible and useable by civilians, who can also come up with their own plan. He sees it as a community tool. He stated its value is determined by how it is used.

He stated that the City government is working on its own energy consumption, and according to Krafchow, if the City can achieve those goals, it therefore will have a right to mandate to the people what they should do. He stated it should start in-house and can be more comprehensive later for residential, commercial, and industrial areas.

A project Krafchow mentioned was the Work Vehicle Idle Time Ordinance, which would mean the business community could not have idling vehicles; the example he gave were tow trucks changing tires. Krafchow also mentioned the Time of Sale Ordinance, which means that homes would have energy audits at the time of sale, and that the time of sale is the easiest time to make changes to houses that would make them more energy efficient. There is also an educational emphasis on energy efficiency, but what they are trying to educate on could be clearer.

As to electric vehicles and photovoltaics, Krafchow stated they are a subsidy to the electronics industry. He discussed free charging stations as being a subsidy to the “richest of the rich” and that there is not a horizon that shows a future replacement of the City fleets. He stated lead acid batteries are very toxic, although they can be recycled. Photovoltaics, according to Krafchow, are not addressing the big picture issue, and stated that mandates are taxes on the poor.

According to him, the big picture issue is to use the most viable source of energy generation, which is wave power. He stated that the technology is not mature but there is interest in investment, and that the city should be the customer, not just the regulator. He stated the City should take a proactive role and work to get clean technologies. The State and industry should be lobbied, as they serve our needs. Wind is not quite adequate, according to Krafchow, and he stated he really has not looked into it.

As to the question of the County producing energy versus Arcata, Krafchow stated Arcata needs to think of itself as a part of the county and it will have to work with it to achieve energy independence. They are dependent entities, and that should be remembered.

Peak Oil is lagging behind a larger problem, which is social unrest in those places where the resources are being extracted. He stated that we need to come up with a way to not use fossil fuels. He believed that Peak Gas will hit first, and does not believe in fuel cells because they are toxic and short-lived.

Krafchow suggested we need an Energy Ascent Plan.

**David Boyd, Executive Director, Redwood Coast Energy Authority, April 9<sup>th</sup>, 2007**



David Boyd runs the Redwood Coast Energy Authority, which works on sustainable initiatives and environmentally renewable energies. Funding is the main limiting factor for this organization, as it mainly comes from public good charges on energy bills; local governments are cash strapped and there is not funding from membership agencies. In Eureka, RCEA is an “energy center” providing a library, a tool bank with energy tools, and workshops. RCEA is an especially important organization because much expertise located in central and southern California does not make it up to the rural north coast. Currently they are focusing on energy efficiency delivering energy savings, which means a focus on programs. There is a small business program, in-house programs, energy auditors, and a focus on lighting. Project management is also supplied for businesses, and may help them get financing. Boyd stated that small businesses are the hardest to serve, and in Humboldt County and Arcata, there is a volatile business market. RCEA also provides services to local governments, such as technical expertise. The residential program that was conducted installed 5,000 CFL bulbs over 12 days. They also had an exchange day, where 509 incandescent bulbs were exchanged for CFLs. Boyd stated another technology that is being encouraged is vending machine controllers, which save vast amounts of energy from being used by those machines.

One initiative that is being considered in Arcata is the Time of Sale Energy Audit. Boyd stated that prior to 1978, many houses were built without the Title 24 standards. The Time of Sale Energy Audit would be a volunteer program for people who are selling homes and taking mortgages out to have an energy audit rolled into the cost of the mortgage. Free energy audits will be available for the next year and a half and there are incentives available. This is a pilot program, and improvements will be made on an entirely voluntary basis. This may have an impact on the closing process for sold homes. According to Boyd, the Arcata Energy Committee is working on a draft ordinance to require inspection at the time of sale.

Boyd clearly had an understanding of Peak Oil. He stated that there is a clear dependence on fossil fuels and that there is a point of maxed production. He stated that there is still a tremendous amount of oil and that he doesn't prescribe to the crash and doom scenarios, but also stated that new discoveries are in decline while new standards of living continually rise. He stated there would be significant economic consequences and that these would be seen gradually. He stated energy is embedded in everything. On parallel tracks with Peak Oil is global warming, and he explained that we should move away from fossil fuels and focus on the environment. According to Boyd, there is no one solution.

One strategy that he sees as viable is localization. He stated that Humboldt County should look into ways of keeping the money spent on energy, which leaves the county and is to the tune of about \$3.19 million, in Humboldt County. As to the political will locally, he stated he has seen a fair share of alarmist scenarios come and go.

As to Arcata's ability to be energy independent, he didn't know whether or not Arcata could produce its own energy per se. He stated there needs to be a regional strategy, and that solar is not enough; it provides only a few percent of our energy needs. He stated that any individual home could be come energy neutral, but that it could be costly and that there are technical limits.

Some issues that David Boyd sees with energy in Humboldt County and Arcata are:

1. Intermittency. He stated that there is some percentage of how much the grid can handle with intermittent production because it becomes unstable. He said that it would have to be



buffered, which is now done with conventional energy. He explained that storage mechanisms would have to be used.

2. Infrastructure: He stated there is one main transmission line for the County. Peak demand is 150 MW, and our transmission line runs at 70 MW. He stated that even without growth, Humboldt County has to produce its own local energy.

Boyd suggested that we can develop more energy than we can use; upgrading the Humboldt Bay PG and E power plant and using reciprocating engines, as well as using renewable energy, could power the entire county. He stated upgrading the transmission lines would cost between \$200 and \$250 million.

Boyd stated that, yes, he is a technoptimist, but that technology can't solve all of our problems. He stated that it requires mindfulness, and that technology won't solve problems, and in fact created many of them. He stated that the market place could sort things out if there was sound public policy in place. He stated that incentives and policies give socially desirable outcomes. He was interested in the carbon cap and trade programs, which create scarcity, but stated there must be ground rules and wise monetary investments, for trading to work. Additionally, "Green Tags", are renewable energy credits, according to Boyd, that assist renewable portfolio standards, which are basically investments in renewable energy projects elsewhere. These types of projects assist in funding renewable energy projects even when companies are not in the direct vicinity of those projects. Boyd stated that the Kyoto protocol won't scratch the surface and that personal lifestyle changes must also occur.

When discussing the strategies of the residential campaign RCEA ran, Boyd stated that they hung door fliers and targeted homes. He stated he didn't know the willingness of the participants, and stated that some homes were given 40+ light bulbs while others were given only one or two, but he didn't know why.

Interestingly, when asked about the controversy over the mercury content in CFLs, which are actually classified as hazardous waste, he stated that there is a greater mercury problem inherent in our power plants, and that, again, mindfulness is needed. He stated that other items classified as "universal waste" such as batteries and hearing aids, have more mercury than CFLs.

Boyd also spoke of Community Choice Aggregation, and stated he is on the fence about it. He stated that it is a good concept but that it may not work in Humboldt County. He stated reasons to promote CCA are expense, which may be less for energy with CCA, and increased local community control over energy. He stated that the economy is fragile in Humboldt County, and that renewable standards are already high here and that renewables are going to happen here without CCA. He stated it is also expensive to make happen, since the feasibility studies are around the \$30,000 range and implementation could cost close to a half a million dollars. He also questioned whether some people's motivation is to simply "stick it to PG&E," meaning some do not like the large utility and CCA is a way to gain control back from them. He stated that no other California community has done this, although Kings County in the southern Central valley is close.

Boyd stated that for local energy development to occur, it may have to be paid with revenue bonds, meaning that the bond is paid back by the revenue generated by the project and this doesn't affect the tax base at all; it can also happen with or without CCA.



Boyd suggested Humboldt County is in greater need for an Energy Disruption Plan for natural disasters, as many do not have electricity to pump gas, and that local hospitals, water pumping capabilities, etc, should be carefully looked at and to be planned for in the event of a natural disaster.

**John Woolley, Humboldt County Board of Supervisors, April 20<sup>th</sup>, 2007.**

John Woolley had never heard of an Energy Descent Action Plan before the interview. He stated that he has working knowledge of the Peak Oil Action Group and what Peak Oil means – which is that there is a production decline of oil and that the price of goods will increase as that production declines. He explained that any policy changes made to deal with peak oil will have ramifications to the current services provided in the County; social and infrastructure requirements will change and resources [financial] will have to be shifted. As to what dialogue Woolley has heard regarding Peak Oil, he stated he “hasn’t heard a rage against it.” Instead, what is being addressed more frequently is global warming. He stated that both issues are linked by what outcomes are produced by both. Peak Oil is still vague in many people’s minds, as he asked the question of what can one county do?

Woolley stated that he is an optimist; that there are many good ideas for alternatives and that some are tested and some aren’t. He stated that investment monies would have to be shifted way from oil to technologies that heat, propel, and define economies.

Woolley stated that current efforts addressing energy in Humboldt County include the creation of the Energy Element for the County, which is to be included in the Humboldt County General Plan. He stated that there are positive and negatives to the element and also in the criticism offered. The job at hand is to address the negative criticism; he stated that unless the issue is tackled nationally, there will be no market change. The builders locally feel that there is an unfair burden placed on them when those issues are addressed; but, the Plan It Green group locally demonstrates practical alternatives to these criticisms. He stated that builders don’t like regulation and would like as much discretion as possible when it comes to choosing how they build. The industry has a narrow view – it does not appreciate the dictation of policies, but the question may be how much the quality of life will suffer once the effects of Peak Oil are felt. Then, a regulatory framework may be required.

Green building initiatives will offset investment or policy. In the general body of politics, perhaps tax measures could be incorporated. Currently, the gas that we consume is subsidized; if we were to pay the full price of gas, the amount that was subsidized could go towards something else, like a healthcare system. To Woolley, the shift required to deal with Peak Oil means they may need to see a redirection of financial resources or the creation of new resources.

When asked about Community Choice Aggregation, Woolley stated that the initial seed money needed to explore the feasibility is substantial – between \$300,000 and \$400,000. Difficulties with CCA include the turn around time to recoup the cost to buy energy, which he estimates to be 30-45 days. That margin of time would have to be covered by something.

Woolley stated that we are used to mitigating environmental impacts only, but with Peak Oil, some of the mitigating concerns will get diminished, so it may be all right to reduce or impact other industries. The permitting process will weigh all those concerns. Woolley stated that Humboldt County may be able to produce all of its energy through wind and wave technologies; he discussed some impacts that may have to be overlooked due to their necessity. Currently, an intern working for John Woolley is interviewing agency heads regarding green house gases, so the County is



examining that issue. The Air Quality Board has a draft bill (AB 32) to create a greenhouse gas emissions plan [LOOK AT THIS]. Woolley is also looking into the IGLEI, which is a five step program for the County to reduce emissions.

Woolley believes there needs to be a national perspective on these issues or there will be a statewide disadvantage. This is due to an unfair burden of cost the state will endure; since Humboldt County is such a mixed bag, there may not be a unified approach taken. Instead, a more steady approach will be taken. When asked whether or not the unfair financial burden would be long-term or short-term, Woolley stated that it is a short-term burden, but thought it would be significant.

Woolley stated that movements that create positive change are vanguard communities.

Further contacts Woolley recommended are:

Val Martinez from RCAA  
LIHEAP: Northern CA Indian Development  
Steve Salzman from Winzler and Kelley  
Humboldt Waste Management: Jim Test  
Fire and Light as a business  
Renner Petroleum re: solarized, hydrogen fueling: Mike Renner  
City Managers of Fortuna and Eureka  
County Planners

## HOUSING

### **Mike Mullen, City of Arcata Planning Program Manager, May 27<sup>th</sup>, 2007**

Mike is originally from the Kneeland area, and is a bona fide local. He attended University at Oregon State and learned rural area and small town planning in Kansas. He has worked in Colorado, Oregon, and Willits, CA.

Mullen stated that Willits is similar to Arcata in that they are progressive, interested in planning and open space, and have an ethic of land use and conservation or preservation. They are interested in compact growth, sustainable development, and in-fill.

Mullen was somewhat familiar with what Energy Descent is, and mentioned a credit program for CO2 emissions. He also had an understanding of Peak Oil and stated that it is the idea of a non-renewable energy source being depleted. He doesn't agree that it has happened, because there is still an opportunity to extract shale oil. He stated that alternative sources will slow down the peak of oil. He believes that biodiesel is a viable option as an alternative, especially if they can get it from biomass.

He stated that current projects going on are the ongoing discussions by the Arcata City Council surrounding green building as well as the Courtyards development. Mullen stated that there is a substandard stock of housing in Arcata, and also stated that there are constraints to attaching green building programs to rehabilitation efforts. There is a preservationist movement here in Arcata that makes green building materials difficult to use in those projects, according to Mullen.

Mullen believes that there is an adequate supply of aggregate and lumber, but not of brick making opportunities; he also stated that brick is not commonly used here for construction.

He stated that current housing developments are focused more on townhouse development, due to the scarcity of land and the promotion away from a cookie cutter design. He agrees with the smaller lots and affordable housing that is being developed. He also stated that Arcata is not meeting a special need identified in the Housing Element 2003, which is that of large families. 2 and 3 bedroom apartments are not being built, which is due to the student population.

The student population in Arcata is changing development; he stated that investors see the students as potential renters and therefore develop areas like Jane's Creek/Sorenson for that population.

Mullen questioned the timing of some development projects, such as the Foster and Alliance subdivision. The City is promoting in-fill, while at the same time projects such as these are potentially going to be annexed into the City; Mullen seemed to question whether or not we should focus on such projects.

Affordable housing came up frequently in the conversation, most likely due to the requirements of the State of California to meet affordable housing goals. Arcata is meeting the requirement for very low and low-income housing, according to Mullen, and that is helped by projects such as the Courtyards. He also stated that 2<sup>nd</sup> units count, such as those behind main houses.

Mullen commented that Humboldt County is looking for areas outside of incorporated cities to be developed, such as the stretch between Blue Lake and Arcata. However, this doesn't really comply with the Arcata General Plan: 2020, and the urban services boundary does not extend into these areas, simply one service like water or sewer. Mullen stated that Arcata can say no to this encouragement as it is incorporated.

As to the growth of HSU and how that is incorporated with the Housing plans of the City, there is a regularly scheduled monthly meeting with the University, and they address the master plan of HSU and how to provide on- and off-campus housing.

Mullen suggested looking towards the end of the list of policies in the Housing Element to see different applicable parts to EDAPs. In the Courtyards project, one constraint he mentioned was that of the energy costs associated with each unit, as there had been plans for solar panels on most of them. Now, since the costs have been higher than expected, the City will probably approve the units to be simply wired for future additions of solar panels, and not actually put them on them.

Another point Mullen made was that the Land Use Designation Guide, or LUDG, is being updated and renamed the Land Use Code (LUC). The LUC identifies windmills as a potential source of energy, but one of the difficulties is that agricultural land and natural resource land have the capabilities of hosting windmills, but residential, commercial, and industrial areas are not, which means that the City's ability to create wind farms or for independent businesses to produce electricity from windmills on site is difficult.

Other people Mullen suggested to contact were: Winzler and Kelley; Joe Mateer, who works in the City; and the Humboldt Bay Housing Authority Corporation.



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ENVS 410: Environmental Science Practicum

# Energy Descent in Arcata: A Guide to Plan for Peak Oil

By: Noelle Melchizedek  
Zachary Mermel  
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# Energy Descent in Arcata: A Guide to Plan for Peak Oil

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# Introduction

Oil is created from plant and animal remains compressed into a unique carbon-rich sedimentary rock. Over time, the heat created by the earth's geological processes gently cooked the carbon within the rock, eventually creating petroleum (literally "rock oil").

Oil is an almost miraculous substance. Its incredibly high energy density, easy transportability, and relative abundance have made it the world's most important energy source. The many uses and inventions derived from petroleum have led to a standard of living for the industrialized world that our ancestors could not possibly have fathomed. From pharmaceutical drugs to plastic lawn chairs to the carpet beneath our feet, all are derived from petrochemicals. The houses we live in are built out of materials such as cement, steel, aluminum and glass whose manufacture requires the use of oil. The food we eat is fertilized, shipped, and processed using petroleum. Oil has created a global distribution system where practically anything on Earth can be acquired, at a cost cheaper than ever before.

However, with these benefits have come certain unintended costs. Pollution, chronic health effects, and global climate change are the most familiar consequences of this useful but finite resource. Less recognizable impacts include the loss of local resources, such as indigenous skills and traditions, unique foods, and native plant and animal species. Motorized tanks, airplanes, and submarines have revolutionized the art of war. Additionally, the rise of the oil-dependent automobile has created a suburban landscape where people are disconnected from their homes, their neighbors, and the natural world.

## Peak Oil

"Peak Oil" refers to the peak of the entire planet's oil production, when extraction rates of petroleum are at their highest. From that point onward, the amount of oil that can be viably mined from the earth decreases with each passing year. Put another way, demand for oil exceeds the supply of it. Domestic production of oil in the United States peaked in 1971. World oil is predicted to peak sometime between 2005 and 2020. Even as production continues through the decline, the cost of this miraculous substance will exceed our capacity to pay. Not only will the supply decline, but what is left will be unreachable except by the wealthiest of nations – and even then, not for long.

The effects of Peak Oil will impact virtually every aspect of our lives. Peak Oil will signal the end of perpetual economic growth and the beginning of a return to valuing local goods and services. Ultimately, the lack of a viable replacement energy source for oil will require communities to reinvest in local resources and local people.

## Energy Descent Action Plan

The term 'energy descent' was coined by David Holmgren, co-founder of the permaculture concept. Holmgren (2003) considers the term 'descent' as the least loaded word that "honestly conveys the inevitable, radical reduction of material consumption and/or human numbers" as the amount and availability of fossil fuels declines in the years to come.

An Energy Descent Action Plan (EDAP) is a holistic method for enabling local areas to transition away from reliance on fossil fuels, and toward vibrant communities that can effectively deal with life after Peak Oil. In 2005, the town of Kinsale in Ireland led the way in creating the first-ever EDAP. Since then, a growing number of cities and towns have created their own EDAPs.



## Arcata, California

Located approximately 275 miles north of San Francisco, California, the City of Arcata is reliant upon many types of non-renewable energy. Foremost among these energy dependencies is access to petroleum that is both cheap and readily obtainable. Practically all goods and services that Arcata residents use in their daily lives rely on oil for their transport or manufacture. Many products that were once produced on a local level have been replaced with cheaply produced goods made in foreign countries where regulations on environmental pollution and labor rights are low or nonexistent.

As oil availability declines, prices for practically all goods and services will increase. The community of Arcata will be forced to reconfigure itself around the principles of frugality, local production, and cooperation. It is thus necessary to create an Energy Descent Action Plan to help guide the City of Arcata towards greater self-reliance.

Fortunately, Arcata is situated in an area rich in resources. The ample amount of rainfall and relatively mild climate has made for fertile agricultural land that has the capacity to provide for virtually all of Arcata's food needs. Furthermore, indigenous knowledge from such tribes as the Karuk, Yurok, and Wiyot can augment traditional Western views on how to best utilize local natural resources. There are also a variety of local organizations, both private and public, that can aid Arcata in the transition to a more localized economy.

The Arcata city government has many resources that can help the city to become more self-reliant in the wake of declining world oil supplies. For example, the Community Greenhouse Gas Reduction Plan (CGGRP) references current and past energy statistics for the City of Arcata. However, the CGGRP lacks both the breadth and enforceability necessary to create a highly energy-independent community. Additionally, while the City of Arcata has many supportive services and departments, there is no one office or committee that is overseeing the development of creating a more self-reliant energy infrastructure. The creation of an effective Energy Descent Action Plan (EDAP) will institutionalize the support of governmental and local community groups in order to implement the EDAP.

The economic future of Arcata is uncertain. The relative remoteness of the city from a major commercial port makes importing goods and services into Humboldt County both difficult and expensive. Additionally, the City of Arcata's economy is not diversified. Arcata has businesses centered on lodging, merchandise, and food that rely on travelers and tourists as a major source of revenue. The major employer of Arcata residents is Humboldt State University, which is located within the city limits of Arcata. The other major employers of Arcata residents are the local hospital and federal, state, and county governments. Many Arcata residents work outside of the Arcata city limits; conversely, many people who reside in surrounding cities work in Arcata. This fact illustrates the economic dependence of Arcata on neighboring cities such as Eureka, McKinleyville, and Willow Creek.

According to the most recent U.S. Census, there are approximately 17,000 individuals currently residing in the City of Arcata. "Arcata is growing slowly in relation to the rest of California. The Arcata Housing Element projects that Arcata will grow from a population of 16,651 in 2000, to 18,529 by the year 2020 – an increase of a little over 11 percent." (AEDSP 2004-2009) While the

intra-city population of Arcata is relatively small, affordable housing is still a major issue. As of 2003, only fourteen percent of Arcata residents could afford to buy a home within the city limits. A household income of approximately \$80,000 is required to purchase a median-priced home in Arcata. The fact that the median income of Arcata households is \$22,000 suggests that affordable housing should be a major focus of the Energy Descent Action Plan.

At present, transportation of both people and goods between the various population hubs surrounding Arcata occurs via truck or car. The dispersion of the county's population has made it difficult to implement an effective mass transit plan that adequately serves the needs of the Arcata community. Currently, the Arcata and Mad River Transit System (A&MRTS) provides hourly commuter bus service around the Arcata vicinity. The Redwood Transit Authority offers semi-regular bus service as far south as Fortuna, as far north as Trinidad, and as far east as Willow Creek. The only other mass transit in Humboldt County is the Eureka Transit Service, which provides hourly public transportation within the Eureka municipality. Given these limited figures, reliable transportation will become a major issue for the city in the post-oil future.

The document that you now hold in your hands is our attempt to help the City of Arcata thrive in a post-Peak Oil world. May it serve as the basis for creating an Energy Descent Action Plan, so that a brighter, more life-sustaining future for the citizens of Arcata may be made possible.

The following sections detail the present conditions in Arcata in regards to local resources, energy, housing, economics, and transportation. While these sections are by no means comprehensive, they are an honest effort to begin the process of discovering what Arcata has for these resources, and what the future may hold when viewed in light of an Energy Descent Action Plan.



# Local Resources

By Zachary Mermel

**Resource** – (*noun*): *a source of supply, support, or aid, esp. one that can be readily drawn upon when needed.*

The City of Arcata is blessed with a bounty of resources within the local area. This section briefly explores four of the most significant local resources available to Arcata: agriculture, timber, solid waste, and biodegradable material.

## Forest Resources

### The Past

Prior to Western contact, the area surrounding Arcata was a part of old growth redwood forest that covered 2 million acres of the north California coast. When white settlers began to move into the area, they started to chop down the redwood trees. Initially, logging companies perceived of the forests in the Arcata vicinity as being able to provide a virtually inexhaustible supply of wood. Due to this, logging companies engaged in harvest rates that were unsustainable over the long term. This resulted in massive erosion of the once-forested hillsides, which destroyed many of the delicate riparian ecosystems.

Over time, the timber industry became the principal driving force of Arcata's economy. As economic markets became more global in nature, the demand for redwood lumber expanded exponentially. One of the primary reasons for this explosion in demand was due to the fact that wood resists shrinkage, rot, and decay. As late as the 1980's, there were 400 mills in the Arcata vicinity (Loughmiller, 2007).

### The Present

Timber is no longer the backbone of the Arcata economy. Now there are only 3 or 4 operating lumber mills in the area immediately surrounding Arcata (Loughmiller, 2007). However, Humboldt County still provides virtually all of the redwood for the entire world. Economic forces such as the globalization of the timber industry, the high demand for redwood lumber, and a dwindling supply of high-quality timber have curtailed much of the harvesting rates within Humboldt County. Interestingly, much of the current demand for redwood comes from areas where the aesthetic qualities of the wood are held in a higher regard than the wood's rot-resistant properties. (Lovelace, 2007)

Arcata's natural resource and agricultural lands currently comprise approximately 45 percent of Arcata's land base. (Arcata Economic Development Strategic Plan, p. 2-6) Some of the more notable natural features found within and around Arcata include the protected forests, such as the Arcata Community Forest and the Jacoby Creek Community Forest. With the recent addition of the Sunny Brae portion to the Arcata Community Forest system, an additional 175 acres will soon be available as a recreational resource for the citizens of Arcata. This addition will bring the total acreage of the Arcata Community Forest to 800 acres. In addition to recreation, the Community Forest engages in

logging operations that can be sustained over the long term. By being one of the few community forests whose forest management practices are third-party-certified by the Forestry Stewardship Council, the ACF serves as an excellent example for other communities to emulate. Additionally, much of the redwood and Douglas fir harvested from within the forest is sold locally.

In addition to its scenic and recreational value, the forested areas around Arcata help protect the area's water supply. For example, the Arcata Community Forest contains the headwaters of urban streams that flow into Humboldt Bay and the Arcata Marsh and Wildlife Sanctuary. The Sunny Brae addition contains over 2.5 miles of waterways, including the headwaters of both Beith Creek and Grotzman Creek, which are part of the Jacob Creek Watershed. The services provided by these forest ecosystems are priceless.

Old growth redwood is ideally suited for use as a building material in Arcata. It is resistant to rot, mold and mildew, all of which are prevalent in this area of the Pacific Northwest. Unfortunately, less than four percent of the old growth redwood stands are still intact. The second and third growth wood that is currently harvested from within the County does not have these aforementioned qualities. These varying degrees in quality are reflected in the prices of these woods; old growth redwood commands a price approximately three times as high as wood of lower quality. (Lovelace, 2007)

There are a surprising large number of local hardwoods that could provide for much of the wood product needs of Arcata's citizenry. Tree species such as Madrone, Douglas fir, Tanoak, Blackoak, Western Red Cedar, Yew, California Claro Walnut, and Pepperwood can be found throughout much of southern Humboldt County. Many of these species exist in substantial stands of old growth. However, these hardwoods are not currently sought after because of their difficulty to mill, and the ease with which exotic wood products can be acquired. Despite this, there are efforts underway to expand the use of native hardwoods. Almquist Lumber Company in Arcata specializes in milling native hardwoods for woodworking, cabinetry, and finish carpentry projects. The Sustainable Hardwoods Network, a project of the Institute for Sustainable Forestry is currently working to promote the viability of local businesses based around the harvesting, production, and distribution of regionally sourced hardwood products in Humboldt County.

### **Future Vision**

Due to the relatively small number of citizens living in the Arcata and Humboldt County areas, it is possible to utilize locally sourced woods in a conservation-minded manner in order to provide wood products for Arcata's citizens well into the future. However, this will only occur if citizens consciously choose to purchase these local woods instead of exotic imports. Collaboration between timber companies, governmental entities, and non-profit organizations will also be necessary. By charging higher prices for each board foot, timber companies could meter out the harvesting of old growth timber in a manner that is both highly profitable and sustaining over the long term. Locally-sourced wood sold within the Arcata municipality could have a value-added price placed on it, so as to encourage inclusion of externalities into the price of wood products from outside the area.



## Agriculture Resources

*“Food security exists when all people, at all times, have access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.”*

- United Nations Food and Agriculture Organization

### The Past

Humboldt County was once renowned for the quality of its agricultural products. In fact, Humboldt County wheat won the blue ribbon for the best quality wheat in America at the 1920 World's Fair in Chicago (Ornelas, 2007). As mentioned in an earlier section, the economy of Humboldt County has historically been based around timber. However, in the early part of the twentieth century there was a growing realization that the cool, Humboldt County climate was ideally suited for growing a variety of crops. Strawberries, currants, raspberries, gooseberries, cantaloupe, cabbage, celery, string beans, peas and cauliflower are some of the crops that grow exceptionally well on the North Coast. However, in the ensuing years, the rise of the dairy industry, coupled with increasing globalization of lower-priced agricultural products, dealt a blow to diversified agriculture in Humboldt County from which the local products sector has yet to recover. (CA Historical Record, 1915)

### The Present

As mentioned in the previous section, Arcata's natural resource and agricultural lands comprise approximately 45 percent of Arcata's land base. (Arcata Economic Development Strategic Plan, p. 2-6) The Arcata Bottoms, once an extensive wetland ecosystem, were drained and converted to agriculture land at the beginning of the 20<sup>th</sup> century. Arcata's agricultural lands are currently used for the cultivation of raspberries, strawberries, lilies, daffodils, potatoes, corn, artichokes, hay forage for cattle, and a number of other shallow rooted crops. (City of Arcata General Plan)

There are currently 128,000 people residing in Humboldt County. Of these, 16,600 live within the City of Arcata (US Census, 2000). Humboldt County currently provides for approximately 25 percent of its food needs from within the county. Most of the organic farmers in the Arcata area export their produce, such as winter squash and potatoes, to outside markets. For example, Humboldt Creamery (a cooperative of independent dairy farms) provides all the dairy products for Costco nationwide. (Ornelas, 2007)

All of the meat presently produced within the county could provide for the protein needs of Humboldt County's populace, Arcata included. Ironically, the vast majority of Humboldt County's meat is transported to markets outside of the area, while a commensurate amount of meat (of often lower quality) is imported into the county. (Ornelas, 2007)

There are currently four (4) community-supported agriculture (CSA) farms in the Arcata area (see Appendix A). A CSA is a partnership of mutual commitment between a farm and a community of supporters. Supporters cover a farm's yearly operating budget by purchasing a share of the season's harvest. Members help pay for seeds, fertilizer, water, equipment maintenance, and labor, among other things. In return, the farm provides a healthy supply of seasonal fresh produce throughout the

growing season. In addition to providing food, these community-based agricultural operations provides a direct link between the production and consumption of food

### **Future Vision**

The higher cost of shipping food to remote locations could result in a greater amount of local food production within and around Arcata. Integrated agriculture could become a mainstay of the many community-supported agriculture programs in the Arcata area. In addition to CSA's, year-round farmer's markets could provide a space for people to cultivate community, through the medium of food. An expansion in the number and size of greenhouses could enable farmers to continue to produce a wide range of quality food throughout the year. Also, local niche markets could be created for specialty crops ideally suited for production in the Arcata area. Social marketing techniques could be employed by local farmers in order to sell their crop(s) to the local population.

The high cost of transportation will naturally limit food imports to those things that we cannot reasonably grow within the local area. Value-added prices on local crops could help people appreciate the seasonality of certain produce. Backyard lawn space could be converted to gardens, enabling homeowners to produce a greater amount of their food themselves. Additionally, the unique microclimates existing in specific localities within Arcata could stimulate the creation of agricultural cottage industries.

According to Susan Ornelas, executive director of the Jacoby Creek Land Trust, approximately 377,000 acres would be required in order to provide for the dietary needs of Humboldt County residents. The most arable land in and around Arcata exists in the Arcata Bottoms. Further research is required in order to determine whether the Arcata Bottoms could provide enough acreage to grow all of Arcata's food needs.



## Waste Resources

*"Waste is just a resource out of place."*

- Anonymous

### The Past

Two hundred years ago, practically all consumer goods were produced and disposed of within the local area. In rural areas, waste was normally buried somewhere on the property. Local processing plants were once found throughout the American landscape. With the rise of the Industrial Revolution, however, mass production became more centralized. During the era of World War II, a very high percentage of the waste stream was recycled in order to support the war effort. During the 1950's, highly disposable consumer products came into vogue. However, certain commodities such as the returnable soda bottle maintained their market appeal. Eventually, even these reusable products were replaced by their disposable counterparts, such as the plastic soda bottle. Between 1950 and 1970, there was little if any recycling in Arcata. The Arcata Community Recycling Center (ACRC) arose out of the first Earth Day in 1970, through the efforts of a group of activists who also founded the North Coast Environmental Center.

### The Present

The City of Arcata currently produces approximately 41,000 pounds of garbage per day. Of this garbage, forty-five percent is food and yard waste, twenty-eight percent is paper, nine percent is plastic, five percent is metal, five percent is construction debris, five percent is mixed residue, and four percent is glass. (HWMA, 2006) Seventy-five percent of Arcata's trash is transported 141 miles to the Anderson Landfill in Redding, California. The remaining twenty-five percent of Arcata's garbage is transported 188 miles to the Dry Creek Landfill in Medford, Oregon. In February of 2007, 3,235 tons of garbage was transported to the Anderson Landfill, while 2,455 tons (comprising the remainder of Arcata's garbage) was transported to the Dry Creek Landfill.

Arcata is currently the only municipality in Humboldt County that has truly met the AB 939 mandate requiring that each incorporated city within the county reduce its landfilled waste by 50 percent from 1990 levels. Interestingly, the baseline levels of 1990 were established during a time when there were still significant amounts of wood slash being disposed of in the landfill. Thus, much of the 50% reduction in many parts of the county has been due to the fact that the lumber mills have closed. Arcata was the sole municipality that did not landfill its wood slash. (Loughmiller, 2007)

The Arcata Community Recycling Center currently processes recycled materials in Eureka and Arcata. In mid-2007, ACRC will open its regional processing center in Manila. The 40,000 square foot facility will be able to store and batch larger volumes of material. This will help to improve the efficiency of processing recyclables generated within Humboldt County. Additionally, ACRC will reduce process costs by consolidating materials processing to a single, larger system. This facility will also have the capacity to process mixed recyclable materials. This will help to divert recoverable materials from the landfill. This will help incorporated cities within Humboldt County in their goal

to achieve a 50% diversion rate in order to comply with California's AB 939 law.  
([www.arcatarecycling.org](http://www.arcatarecycling.org))

Of the solid waste produced in the local area, glass is one of the only substances that is recycled locally. Aluminum is transported to Tennessee. Plastics are shipped to China. Cardboard is trucked to the Bay Area. ACRC generates approximately 200 tons of glass every month. Thus, the 5-10 tons of glass that Fire & Light purchases monthly from ACRC accounts for only five percent of all glass in Humboldt County. A negligible amount of glass is also used for lining plumbing lines in construction projects. Perfect Pots in Redway also purchases a nominal amount. (Loughmiller, 2007)

Kernen Construction grinds down construction waste products such as brick, concrete, glass and asphalt for use as aggregate material. (Gilmer, 2007) Kernen Construction also uses glass for producing aggregate. ACRC is currently in negotiations with the State of California to determine how Kernen Construction can absorb the glass generated in the local area. This is a much more cost effective option for ACRC, as it negates the need for shipping this glass outside of the area for processing. (Loughmiller, 2007)

The Humboldt County Integrated Waste Management Plan provides a guide for improving the utilization of solid waste in the county. This Plan is currently administered by the Humboldt Waste Management Authority (HWMA). It provides details on the background of waste management within the local region, and goals and policies for the future. The document also provides a list of alternatives for reducing, reusing, and recycling various materials within the Humboldt County region.

### **Future Vision**

The lack of a viable means of transporting reusable and recyclable material to and from the county could result in an increase in the value of reclaimed materials. The greater scarcity of certain valuable materials could induce a return to using materials multiple times, such as returnable glass bottles and bulk purchases. The materials that were formerly transported many hundreds of miles away for recycling prior to the Peak Oil age, will most likely be reused locally to serve another useful purpose. Once materials reach the end of their useful life, they could be sent to a regional cooperative recycling center to be transformed into new products sold by local businesses. Enterprising persons will create businesses centered on the reclaiming of these materials.



## Biodegradable Resources

### The Past

For more than 10 years, starting in 1990, North Coast Quality Compost collected green waste and food waste from different places within Humboldt County. Prior to that time, there was no central composting facility within the Arcata area. In 1995, Andrew Jolin began collecting green waste and food waste in Alton, south of Fortuna. In 2004, the Humboldt Waste Management Authority entered into a contract with Mad River Compost to promote the diversion of green waste within Humboldt County.

### The Present

The fact that almost seventy percent of Arcata's garbage is composed of biodegradable material should be viewed as a blessing. We have the potential to use this resource to develop rich, fertile soil for the people of Arcata and the greater Humboldt community. It is puzzling, then, to note that the Humboldt Management Authority provides the Arcata/Eureka Community Recycling Center with more than \$500,000, while Mad River Compost, on West End Road just outside the Arcata City limits, is allotted only \$80,000 to run their operations. Mad River Compost is currently the only location in the immediate area where composting operations are taking place on an industrial scale. In 2006, six thousand tons of green waste was generated by the cities of Eureka, McKinleyville and Arcata. This amounts to between 15-20 tons of green waste per day. Contributions from lawn maintenance workers and landscapers constituted the bulk of these green waste figures. Mad River Compost's composting operation is only able to divert about twenty five percent of compostable material from the waste stream. Fifteen percent of this is food waste, while the remaining ten percent is green waste. (Jolin, 2007)

### Future Vision

Andrew Jolin sees mandatory curbside pickup of green waste (leaves, fruits and vegetable scraps) as the key to effectively reducing Arcata's biodegradable waste in the future. Mr. Jolin contends that curbside pickup will not cost ratepayers any additional money, since the disposal fee would not be affected by the method of green waste collection. Andrew hopes to have Mad River Compost diverting 10,000 tons of green waste from Humboldt County by 2009. This seems feasible, since Mad River Compost has the capacity to expand its operations by another five acres.

There are a number of entities currently working to utilize biodegradable waste as a resource for the local area. The rural Organics Recycling Board (ORB) project has been working on increasing the marketability of locally composted commercial organics within the greater Humboldt Bay region. The Humboldt Waste Management Authority is currently looking into acquiring an anaerobic biodigester for the Humboldt Bay region. A biodigester is a self-contained unit that uses bacteria to break down organic solids, such as fruit and vegetable scraps, certain types of manure, even meat and dairy products. The resulting sludge could be composted at a site such as Mad River Compost. This would help to reduce the volume of the overall waste stream. A biodigester also produces methane as a byproduct, which could provide direct renewable energy for use by the county or a private entity. (Jolin, 2007)

## Other Local Resources

Due to the limited time frame of the academic semester in which this report was created, we chose to focus on four of the more important local resources within the Arcata that will be affected by Peak Oil. However, it is important to note that the local resources not detailed in this report (e.g., water, riparian areas, indigenous knowledge and preventative health) can also aid the City of Arcata in effectively dealing with declining world oil supplies. Therefore, we highly recommend researching other resources within the local area, such as those just mentioned, in the creation of a comprehensive Energy Descent Action Plan for the City of Arcata.

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# Energy

By Noelle Melchizedek

## The Present

According to the Humboldt County Energy Element Technical Report, most of Humboldt County's primary energy is imported, except energy created by biomass. Most of the electricity used in the county is generated locally, but a majority of it is with natural gas, 90% of which is imported. The capacity of electricity and natural gas transmission lines is not great enough to import all of the county's needs. Also, essentially all of the transportation fuels used in Humboldt County are imported, with the exception of a small percentage of biodiesel.

Through several interviews with local government, non-profit, and otherwise affiliated individuals, a sense formed that there is little knowledge regarding EDAPs in the energy-concerned community. While many individuals professed knowledge of initiatives, actions, or future plans that would assist in the creation of an energy independent, self-sufficient community, the sense

The information presented in this section will come from the Humboldt County Energy Element Technical Report (Report), as this is the most comprehensive information available for energy use locally. Arcata is dependent upon the energy production by the County, as well as the transmission lines that enter into Humboldt County. Further investigation into the energy use of Arcata, specifically, should be undertaken in the future.

## Consumption Patterns

Energy in Humboldt County is used in three primary ways: transportation, electricity, and as heat. The Report states that the "primary energy consumption" in 2003 was in the form of natural gas at 38%. Other energy sources used were gasoline/diesel at 35%; biomass at 21%; imported electricity at 4%; propane at 2%; and electricity from local solar and hydroelectric at 0.3% (17). Interestingly, the Report states that electricity consumption rates in residential, commercial, and industrial sectors are almost the same – 31-35%, while natural gas consumption in Humboldt County differs significantly between sectors: 18% for industrial sectors, 22% for residential, and 10% for commercial, with an overall use for electricity generation at 49%. The agricultural sector of Humboldt County uses only 2% of electricity and 1% of natural gas consumed.

The Report also outlines the percentages used by the commercial and residential electricity sectors for electricity; 39% is used for lighting; 17% for refrigeration; and 6% for ventilation, plus an "other" category at 38%. Natural gas consumption mostly occurs in space and water heating, for a combined amount of 80%.

## Energy Supply

According to the Report, 100% of gasoline, propane, and diesel is imported to Humboldt County; 89% of natural gas and 27% of electricity is imported; and no biomass is imported. The Fairhaven Power company, Stockton Pacific Samoa Pulp Mill, Pacific Lumber Company, and PG&E Humboldt Bay Power Plant are the main local suppliers of electricity. While it is true that a large portion of electricity is produced locally, it is mostly from natural gas, a finite resource, and it is also

mostly imported. It has been estimated that if the Humboldt Bay Power Plant were upgraded and running to capacity, Humboldt County could produce all of its own electricity.

Constraints to energy supply and demand include the remoteness of the County as well as the capability of transmission lines. The isolation of the County has an impact on the availability and reliability of supply, as witnessed in 2005 when storms unexpectedly cut power access for several days within the County. Also, the transmission lines for natural gas and electricity are not capable of importing all of the County's required energy. Lastly, all of the propane fuel used is imported by truck, and there are only two major highways that can handle the transport: Highway 101 and 299.

### **Current Initiatives**

In 2006, the City of Arcata published the Community Greenhouse Gas Reduction Plan (CGGRP), which is designed to assess and reduce the current greenhouse gas emissions resulting from fossil fuel use, energy inefficiency, and to increase awareness and education about energy issues. The CGGRP contains recommendations for Arcata to follow, including: Energy Efficiency, Renewable Energy, Sustainable Transportation, Waste and Consumption Reduction, Carbon Sequestration and Other Methods, and Cross-Cutting Approaches. The plan also contains "Milestones" with which to measure success, including: Community Greenhouse Gas Inventory, Set and Emissions Reduction Target, Arcata's Greenhouse Gas Reduction Plan, Implementation Plan, and Monitoring and Evaluation.

### **Vision for the Future**

Much of what is contained in the CGGRP coincides with the purpose of an Energy Descent Plan. Particularly applicable components to an EDAP will be outlined here, directly from the CGGRP, and ideas are suggested for future implementation and success. References are found at the end of the Energy section.

#### ***Encourage Energy Efficient Buildings, Building Construction, and Retrofit:***

Several recommendations were outlined regarding possible land use and building code changes to have them include encouragement for energy efficiency and co-generation between commercial and industrial facilities, to minimize increase in community net energy use, and to require energy audits whenever a building changes owners, leasers, or when mortgages are taken out.

#### Further recommendations

In order for such recommendations to be feasible, education must happen within the responsible City departments, as well as within any committees through which permits are acquired. With that said, materials could be created to better facilitate communication and education about such land use regulations and building codes that are changed. Further recommendations include:

1. Creating educational packets that include information on new building codes and land use regulations, to be regularly updated. Information therein may be the appropriate departments or committees and their contact information; physical as well as online resources; local builders, contractors, and other entities that are included in any development projects that are supportive of and participants in the proliferation of these



recommendations; and technological suggestions that reduce energy consumption and an explanation of what they are.

2. Creating workshops and educational materials for those officials who are participants in these processes, as governmental turnover and other committee activities may cause the loss of information and reinvention of the knowledge wheel.
3. Create incentives for rental agencies to retrofit local housing. Further details for this vision are outlined in the "Housing" section of this report.

### ***Encourage Energy Efficiency at All Levels***

Two recommendations are particularly applicable to the creation of an EDAP. The City of Arcata is encouraged to develop relationships with other cities or County entities that are integrating energy efficiency in their municipal plans, as well as to partner with local organizations on energy-related projects (including the Redwood Coast Energy Authority).

#### Further Recommendations

Arcata is an incorporated city, is a part of Humboldt County, and the State of California. The success of any initiative depends upon using the multi-solution approach. Innovations are taking place all over the county, state, nation, and world. Arcata should work with other entities focused on energy-related issues. The Redwood Coast Energy Authority as well as the Peak Oil Action Group are two local organizations that are directly working on these issues and that both harbor vast intellectual resources. The City should hold stakeholder meetings that identify these groups and others who can achieve the mission of energy efficiency, not just within the City government, but throughout the community.

### ***Encourage Personal Energy Conservation in Residences, Businesses, and City Operations***

Education will be the key to success of any citywide plan, whether it be one to reduce greenhouse gas emissions or to plan for the future impossible cost of fossil fuel energy. Recommendations regarding education from the CGGRP include having educational activities and outreach at local events, schools, and businesses; encourage efficiency practices; and incorporate Energy Star appliance requirements into contract specifications where possible.

#### Further Recommendations

Once again, by partnering with other organizations and sharing the load of educational outreach, the City can reach a broader audience. Informational workshops should be given per neighborhood/community, with local residents facilitating. A sense of community may develop from these efforts. While it would take a substantial amount of time to mount such a campaign, the power of such dissemination could be incredible. Door to door canvassing or door hangers could be used to announce such programs, and they should be held at times when populations may attend, either on the weekends or in the evenings. A proactive campaign such as this could have long-lasting impact on neighborhoods as well as communities.

## *Renewable Energy*

The section that coincides directly with the creation of an Energy Descent Action Plan for Arcata is “Renewable Energy.” The fact that the City of Arcata is both trying to reduce its emission of greenhouse gases while at the same time encouraging local control of energy is very promising. The infrastructure is already established to assist in success. The CGGRP recommends the City encourage utility transitions to renewable energy and choose to purchase “green electricity” when this option becomes feasible and to consider a locally- or regionally-owned utility, such as a Community Choice Aggregation (CCA) model (further description of this concept below). Included in the building codes and regulations, new developments could be required to be constructed to allow for the easy installation of future solar energy systems, when feasible. It was recommended that the city offer low interest loans for residential solar energy systems in conjunction with the City’s First Time Home Buyers Program. Retrofitting currently existing wood stoves is also a recommendation; as Arcata is situated in an area rich with biomass, this recommendation could coincide with future visions for resource use locally. The last applicable CGGRP measure includes developing wind energy locally.

### Further Recommendations

Each of the following suggestions should be researched for feasibility to the extent possible:

#### *Community Choice Aggregation*

California legislature passed Assembly Bill 117 in 2002, giving local governments the opportunity to aggregate the retail electric customers in their jurisdictions for the purpose of purchasing power. In Humboldt County’s case, PG & E would still provide the billing services and transmission of power. Community Choice Aggregation (CCA) would allow the community of Arcata to choose from whom they purchase their electricity, what kind of power it is, and also to negotiate the rates they pay. The City of Arcata or other organizations are also allowed to apply to administer energy efficiency programs in their jurisdiction. Currently there are no communities in the State of California with a CCA program, although there are some that are seriously considering it.

Some barriers associated with this is the cost of conducting a feasibility study. This alone is several thousand dollars, and the outcome of such a feasibility study is never certain. Another barrier would be community buy-in; while some may believe that this type of initiatives gains community independence from PG&E, in reality Arcata would still be dependent upon them as PG&E would provide distribution and billing services. CCA may be one of many solutions necessary to creating an energy self-sufficient community, given our current federal, state, and local government structures.

#### Municipality Utility

Another option Arcata has is to create a municipal utility. These generally own the distribution system and some also own generating facilities or purchase wholesale electricity. Arcata could be empowered to make its own decisions about the electrical utilities used here and may even provide lower cost energy to the citizens of Arcata.



Barriers to municipal utilities include the local land use designations in Arcata. Currently, the Land Use Designation Guide (LUDG) is being revised and will soon be renamed the “Land Use Code,” or LUC. According to Mike Mullen, the City of Arcata Planning Program Manager, agricultural and natural resource lands can have windmills placed on them, but residential, commercial, and industrial designations cannot. This may be a policy issue that can be worked out with the City Council and may encourage on-site power generation. Also, the local gas and electric provider, PG&E may take issue with this approach, raising the costs of implementing a municipal utility unreasonable.

### Local Wind Energy

Technology for wind energy has been developed to a mature state. While the first wind turbines caused many problems, including noise and adverse effects to bird populations, these difficulties have been solved to a reasonable state. According to the Report, there are just a few viable sites for wind electricity generation, but is potentially a large resource. The City of Arcata should investigate the feasibility of supporting such projects as the **Bear River Ridge Wind Project**. SHELL WindEnergy is proposing to install up to 35 wind turbines with a total electric generating capacity of 70 MW. Approximately six miles south of Ferndale, the project may be connected via cables to a substation – although, both the cables and substation must be constructed first. The plan has been submitted to the Humboldt County Planning Department and must go under CEQA (California Environmental Quality Act) environmental review.

Residential scale wind power should be explored by the City of Arcata; the feasibility of this type of local energy generation should be explored and sites in Arcata should be delineated. Much like solar panel installation, future construction and/or rehabilitation activities could wire for wind power once those sites are discovered. State incentive as well as local incentive options should be explored to encourage wind development.

Barriers to this type of development that must be studied are potential peak load difficulties, as wind does not always blow. How will those demands be met, and does there need to be some sort of storage for this energy? Also, land ownership will have to be reviewed and owners compensated, when necessary. Transmission systems will have to be built with any wind resource if it is to contribute to the greater community’s energy needs, not just on-site. The access to Bear River Ridge could potentially be difficult, as could construction, and will have to be mitigated to avoid serious environmental impacts. Lastly, although wind technologies have improved over time, environmental issues such as affects on bird populations must be mitigated.

### Local Wave Energy

Wave technology is currently only beginning to be developed; while there may be great potential in Humboldt County for wave energy, Arcata may not be able to depend on this energy to plan for the effects of Peak Oil. However, the City of Arcata should still explore the feasibility of supporting such a venture, because Arcata is and will be dependent up on the county for energy production. According to the Report, wave energy may be cost competitive with other renewables in another decade or so. However, the permitting process for a wave power plant may present a significant barrier. Also, primary sites for wave energy occur on the northern Mendocino and southern Humboldt County coasts, so this type of energy may assist Arcata in becoming self-sufficient but requires the County and other communities to implement it.

## Solar Electricity and Hot Water Heating

The County of Humboldt has installed photovoltaic systems, on a per capita basis, 3.5 times faster than the rest of California. In Arcata, it is recommended that the City pass initiatives that encourage and/or require building construction to be made appropriate for solar installation; such options are south or south-western construction for good solar access and the pre-wiring necessary to support solar electric and solar waterheating installations. Local rebate plans as well as state plans could be implemented to encourage further solar growth. The Redwood Coast Energy Authority could be instrumental in the promotion of solar installation, as it has assembled a strategic plan, including outreach, training, and land use code changes, to encourage the installation of new systems. Interestingly, the City of Arcata developed a solar utility that provided financing for solar water heating installations; according to the Report, many of the systems that were installed in the 1980's are still in existence, although some don't work. The City could seek these systems out and determine a rehabilitation program for them. Also, it is estimated that with the right promotion, the solar water heating market could be revived and could save significant amounts of energy.

### *Cross-Cutting Approaches*

The CGGRP recognizes that separate efforts such as those listed above are not, in actuality, separate from each other. Much like Arcata's Greenhouse Gas Reduction Plan, Energy Descent Action Plans recognize the absolute connectedness of such plans. Cross-cutting approaches encourage collaboration and find creative paths for new relationships to form.

These overarching recommendations include:

1. **Develop a Citywide Green Building Promotional Campaign:** As with the "Renewable Energy" section above, this is a recommendation to educate city staff and policy makers about best practices, preparation, and provision of checklists and specification guidelines for contracts, amending purchasing protocols, preparing a website, and offering opportunities for in-service and professional training.
2. **Support Green Economic Growth:** The city of Arcata should promote economic development policies that encourage businesses that employ sustainable energy practices.
3. **Develop Regional Educational Programs, Incentive Programs, and Partnerships:** The City should work with local groups to promote energy efficiency, renewable energy, sustainable transportation, waste reduction, and other programs that will serve to reduce greenhouse gas emissions in our community.

### Future Recommendations

It has been argued that mandating green building in a community puts a special burden on developers and builders within that community. This is due to the need to provide services to two customer bases – those that want to or can only afford to build conventionally, and those that incorporate green building into their construction. Effectively, a mandate may encounter such opposition that the creation of an EDAP may not be possible. Therefore, the first of the above CGGRP recommendations is very important – to create a Green Building Promotional Campaign. However, that promotional campaign should include more than just information on green building –



it should act as a resource guide for local contractors and builders, for available local resources, and as an educational campaign for even those outside of the developer/construction world.

The strength of an EDAP lies in its own cross-cutting approaches – it examines the intersections of community sectors and encourages the realization that everything is connected and dependent upon each other. Therefore, the promotional campaign should extend to different communities locally – homeowners, businesses, schools, non-profit organizations, human rights campaigners, activists of all shape and color, those from all socio-economic backgrounds. It should be made available in languages other than English to be truly inclusive of the community of Arcata. Overall, it will be the effectiveness of cross-cutting approaches that makes an EDAP successful.

### **Bibliography**

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[http://arcatacityhall.org/energy/Final%20%20GHG%20plan%208\\_06%20complete.pdf](http://arcatacityhall.org/energy/Final%20%20GHG%20plan%208_06%20complete.pdf).  
Last accessed May 6, 2007.

Interview with John Woolley, Humboldt County District 3 Supervisor. April 20<sup>th</sup>, 2007.

Interview with Jim Zoellick, Schatz Energy Research Center, City of Arcata Energy Committee.  
March 27<sup>th</sup>, 2007.

Interview with Michael Winkler, Schatz Energy Research Center. March 22<sup>nd</sup>, 2007.

Interview with Moshe Krafchow, City of Arcata Energy Committee, April 28<sup>th</sup>, 2007.

Interview with David Boyd, Redwood Coast Energy Authority, Executive Director. April 9<sup>th</sup>, 2007.

Zoellick, Jim. Humboldt County Energy Element Appendices: Technical Report. October 2005.

# Housing

By Noelle Melchizedek

## The Present

The City of Arcata updated the community's Housing Element in 2003. The most up-to-date information available is from this document and will be summarized here.

According to the 2000 Census, there are 7,051 households in the City of Arcata. According to HCAOG, the City of Arcata will increase by 491 households between 2000 and 2008, a 7.0 percent increase. By 2020, Arcata is predicted to have 7,885 households, with a growth rate of 4.5%. (1990, 2000 Census; DOF projections; HCAOG Draft Humboldt County Regional Housing Needs Plan)

The majority of households in Arcata are non-family (60.1%) and the average is 2.16 persons per household. The percentage of homes that are owner-occupied is 37.5% and 62.5% of homes in Arcata are renter-occupied. Data in the Housing Element states that there were only 406 new single family housing units built between 1990 and 2000, but only an estimated 5.9 percent of the new single family units are owner-occupied. According to the Element, this indicates a lack of for-sale housing units in Arcata. Currently, the largest numerical increase in housing units are single family homes since 1990.

Approximately 55.4% of housing, according to the Housing Element, was built after 1970. This has specific indicators, namely, that those houses should be compliant with state regulations regarding energy efficiency, as those laws were passed after 1970. This still leaves 44.6% of the housing stock built before 1970. As there is a higher percentage of homes that are owner-occupied that were built between 1950-1959, it may be an indication that the *most affordable* homes in Arcata are pre-1970 – and thus potentially not particularly energy efficient. 1,913 housing units were evaluated; 11.2 percent were in need of minor repairs, 3.1% needed moderate repairs, and 0.3% needed substantial rehabilitation. The qualities in the housing used to determine these percents were as follows: minor repairs are external painting or siding, roof patching, and/or window replacement; moderate rehabilitation repairs include listed for minor, but considered worse; and substantial rehabilitation is needed when all surveyed items, including doors, roofs, siding, foundation, and windows need repair. Dilapidation was considered a classification only when the costs of repair would exceed the cost to replace residential structure.

Interior conditions were also surveyed. The Housing Element took into consideration the age of the unit, electrical, plumbing, and/or other improvements that are not visible from the exterior of the household. Noted in the Housing Element was the formula used by the U.S. Department of Housing and Urban Development (HUD) for assessing toxic materials (such as asbestos and lead) contained in housing units as determined by the age of the unit. Due to this formula and the survey, it was determined that 63.1% of housing units are in need of rehabilitation, and .3% require replacement, and 4,035 housing units require lead abatement.

Currently Arcata has 89.6 acres of vacant land designated in the Arcata General Plan: 2020 designated for multi-family development and 153.2 acres for single-family development. Overall, the number of units that could be developed as of 2003 is 981. Currently, there are no mandates or volunteer programs that offer incentives to consider local resources or green building construction.



As Arcata must meet a certain number of affordable housing units' threshold as well as plan for future growth of other income levels, it is imperative that any Energy Descent Action Plan take into account low-income populations in community green building programs.

## **Applicable Housing Element Policies**

### Housing Element (HE)-37: Energy Conservation and Solar Access Requirements

This policy states that the City shall continue to support comprehensive energy conservation and maintain conservation standards and the Solar Access requirements of the Comprehensive Land Use Code. The specific action required is to continue to implement the Solar Access requirements of the Code to all new developments, where applicable. The City shall continue to support other energy-conservation agencies and groups by coordinating their efforts in Arcata and providing the public with information on resources available. The funding source for this activity is the General Fund and the responsible parties are the Community Development Department, Building Division, and the Environmental Services Department of the City of Arcata. (Housing Element 2003, 3-29)

### HE-38: Green and Alternative Building Guidelines

This policy states the City will evaluate the use of 'green' (energy efficient and environmentally sensitive) alternative building methods and materials" The specific action required will be that the "Community Development Department and the Building Division will evaluate the feasibility of using alternative building methods and materials, taking compliance with state building codes and Arcata's climate into account. The City will revise the Building Code to allow use of alternative building methods deemed feasible and appropriate, beyond the minimum requirements of Title 24. The City will establish guidelines for new construction, and remodeling, in order to promote energy efficiency and reduce building costs and promote the use of renewable energy technologies in residential and mixed use buildings and projects (e.g., solar, biomass, wind, and geothermal). The funding source for this activity is the General Fund and the responsibilities are to be the Community Development Department and the Building Division. (Housing Element 2003, 3-29)

## **Future Vision**

In the future, the City of Arcata, working in conjunction with such entities as the Humboldt Bay Housing Development Corporation, local contractors, architects, and builders, and organizations with the expertise to educate on energy issues, should have energy efficiency and local building resources programs for the citizens of Arcata. As affordable housing is such a large issue for both Humboldt County and Arcata, Arcata shows strong promise to be a community that exemplifies affordable, sustainable housing. Community garden plots, mixed use land designations, and co-housing units can all help to create cohesive, interdependent, and healthy communities and economies. A "social mix" of different socio-economic backgrounds should be encouraged in Arcata as well.

- Housing should be constructed in ways that take advantage of the waste stream as a resource and not leave it to the landfills. Each additional housing project should consider the following questions:
- Are residents completely car dependent?
- Are schools of a walkable distance?
- Will the design facilitate community?

- What steps have been taken to reduce the waste stream, increase energy efficiency, and reduce CO<sub>2</sub> outputs?
- Are there areas for food production?
- What is the solar access?
- Are there alternative energy producing technologies that can be outfitted into developments?
- Has the building of the units facilitated growth in the local economy?

The Housing Element 2003 policies listed above were set to be completed by 2005; however, research proved unfruitful when attempting to find such guidelines. It is suggested that the City of Arcata prioritize these parts of the Housing Element in order to truly be effective at planning for energy descent. Plan It Green, an organization recently formed that includes architects, planners, engineers, and builders is a prime candidate to take on the analyses and studies necessary to encourage this process.

### **Bibliography**

Interview with Mike Mullen, Planning Program Manager from the City of Arcata, April 27<sup>th</sup>, 2007.

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## Future Vision: A Timeline

The nature of this document requires that another group continue creating an Energy Descent Action Plan for Arcata. The following Future Vision section was written to encourage the next group working on this project to adapt their vision to our plan. The Humboldt Peak Oil Action Group (POAG) is a group that focuses on Peak Oil and has had contact with our student group during this process. This group is well-suited to facilitate the creation of an EDAP, but no expectation of commitment currently exists.

The following timeline is suggested for the continuation of this project:

Year 1, beginning July, 2007

- July – August: POAG will create a scoping process that will identify stakeholder groups. These groups should have a vested interest in the project, decision-making power for any of initiatives put forth, and/or resources integral to the success of the project. This scoping process should include potential partnerships with the City of Arcata, non-profits, and Humboldt State University, as well as any other interested party.
- July – June, 2008: Comprehensive analyses
  - Different members of POAG will determine which sections they would like to work on and prioritize the timeline for this effort.
  - POAG shall conduct a more comprehensive analysis of the areas that are covered in our project, which include transportation, economics, resources, energy, and housing
  - POAG shall conduct comprehensive analyses on the following topics: food, education, youth and community, and health. Comprehensive analyses will include:
    - Existing resources and infrastructure
    - Determination of current initiatives that may be adapted to fit the EDAP model
- Each month: POAG should hold monthly meetings to monitor the progress of the analyses.
- June, 2008: At the end of this process, a community-wide forum will be held to present the findings.

Year 2, July 2008

- July: Those focus groups will approach the appropriate organizations/committees/individuals not already involved to develop feasible initiatives for each topic stated above.
- July 2008 – June, 2009: Feasible Initiatives: feasible initiatives are those programs, mandates, incentives, and regulations that can be created to encourage self-reliance and energy independence for Arcata. Local resources, technological innovations regarding energy, and also reducing or dependence on oil imports should be the ethos for this effort.
- August 2008: Ad-hoc committees will be formed and other established entities should agree to commit to the creation of an EDAP by this time.
- August 2008: A timeline including EDAP Measures for each topic shall be formed outlining community actions that will be taken and who is responsible for implementing the measures.
- July 2008 - June 2009: Adaptive management practices and innovation should be encouraged to ensure that efforts and future goals are carried out in a realistic manner.

Further goals and timelines shall be established by the organization responsible for the creation of an EDAP. It is only feasible to plan for two years of activity at this time, as the creation of a comprehensive and plan capable of being implemented will take several years.

## Conclusion

As with many things, there are no easy answers to living in a world with less oil. Major disruptions to our modern way of living are unavoidable. Perhaps instead of an Energy Descent Action Plan, we should create an Energy Ascent Action Plan – a way for us to transcend this dependence on non-renewable resources, and ascend into renewable, sustainable energy production. We can choose our response to Peak Oil. Our hope is that this document will be a starting point for enabling the community of Arcata to proactively respond to the challenge of Peak Oil.

*"We are the ones we have been waiting for."*

~ the Hopi Elders



## APPENDIX A: Contact Listings (by topic)

### Timber Resources

Mark Andre  
Chief Forester, City of Arcata  
736 F Street  
Arcata, CA 95521  
707-822-8186  
[mandre@arcatacityhall.org](mailto:mandre@arcatacityhall.org)

Sierra Pacific Industries  
P.O. Box 496028  
Redding, CA 96049-6028  
(530) 378-8000  
[sierra@spi-ind.com](mailto:sierra@spi-ind.com)

Humboldt Watershed Council  
2322 Buttermilk Lane, Arcata, CA 95521  
707-822-1166  
[sheds@humboldt1.com](mailto:sheds@humboldt1.com)

Green Diamond Resource Company  
California Timberlands Division  
P.O. Box 68  
Korbel, CA 95550-0068  
(707) 668-4400

Institute for Sustainable Forestry  
PO Box 1580  
Redway, CA 95560  
707-923-7004

### Agriculture Resources

Farm and Community Development Advisor (Deborah Giraud)  
UC Cooperative Extension  
445-7351  
[ddgiraud@ucdavis.edu](mailto:ddgiraud@ucdavis.edu)

Arcata Educational Farm  
Old Arcata Road  
Arcata, CA 95521  
(707) 616-1946  
[arcataedfarm@yahoo.com](mailto:arcataedfarm@yahoo.com)  
*Serving: Northern Humboldt County*

Membership: 22 weekly baskets at \$400/share  
sliding scale of ±\$25 (\$375-\$425)

College of the Redwoods Sustainable Agriculture Farm  
409 Shively Flat Rd  
Shively, CA 95565  
(707) 845-6977  
[franz-rulofson@redwoods.edu](mailto:franz-rulofson@redwoods.edu)

*Serving: Humboldt Bay and surrounding communities*

Membership: \$400 for a full share, or \$250 for a 1/2 share

Loving Earth Gardens

Located at the Salmon House, on the corner of Spear & Janes Road in Arcata.

Ocean Air Farms  
950 Old Arcata Road  
Arcata, CA 95521  
(707) 616-1632

*Serving: Arcata & Eureka*

Membership: 22 weeks, \$400/share

Redwood Roots Farms

P.O. Box 793  
Arcata, CA 95518  
(707) 826-0261

*Serving: Arcata, Bayside, Eureka, McKinleyville, Trinidad*

Membership: 5 months, \$400-500/share, sliding scale

Windborne Farms Grain CSA/Co-op

A consortium of Humboldt County residents who have banded together to access more locally-grown wheat, oats, and other grains from a CSA in Scott Valley (near Yreka). Members of the "coastal co-op" receive 15 pounds of grains monthly for 10 months, for \$300 a year.

### Waste Resources

Mad River Compost

Andrew Jolin, President, GESS Environmental  
6360 West End Road  
Arcata, CA 95521,  
(707) 840-9676  
[gessenv@aol.com](mailto:gessenv@aol.com)

City of Arcata

Environmental Services Division  
736 F Street  
Arcata, CA 95521  
(707) 822-8184

Humboldt Waste Management Authority



1059 West Hawthorne Street  
Eureka, CA 95501  
(707) 268-8680  
www.hwma.net

Arcata Garbage Company  
30 South G Street  
Arcata, CA 95521  
(707) 822-0304

Arcata Community Recycling Center  
P.O. Box 1126  
Arcata, CA 95518-1126  
(707) 822-4321  
www.arcatarecycling.org

### Energy

John Woolley, District 3 Humboldt County Supervisor  
825 Fifth Street, Room 111  
Eureka, CA 95501  
(707) 476-2384  
<http://co.humboldt.ca.us/board/>

David Boyd, Executive Director  
Redwood Coast Energy Authority  
517 5th Street  
Eureka, CA 95501  
(707) 269-1700 (local)  
(800) 931-RCEA (toll free)  
(800) 931-7232 (toll free)  
<http://www.redwoodenergy.org/>

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(707) 826-4345

Michael Winkler, Research Engineer  
Schatz Energy Research Lab  
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Arcata, CA 95521  
(707) 826-4345

Redwood Community Action Agency  
Energy and Environmental Services  
(707) 444-3831

## Housing

Mike Mullen, Planning Program Manager  
Community Development Department  
Arcata City Hall  
736 F Street  
Arcata, CA 95521  
(707) 822-5955

Humboldt Bay Housing Corporation  
824 L St  
Arcata, CA 95521  
(707) 826-7312

Building Division  
City of Arcata  
736 F Street  
Arcata, CA 95521  
(707) 822-5956



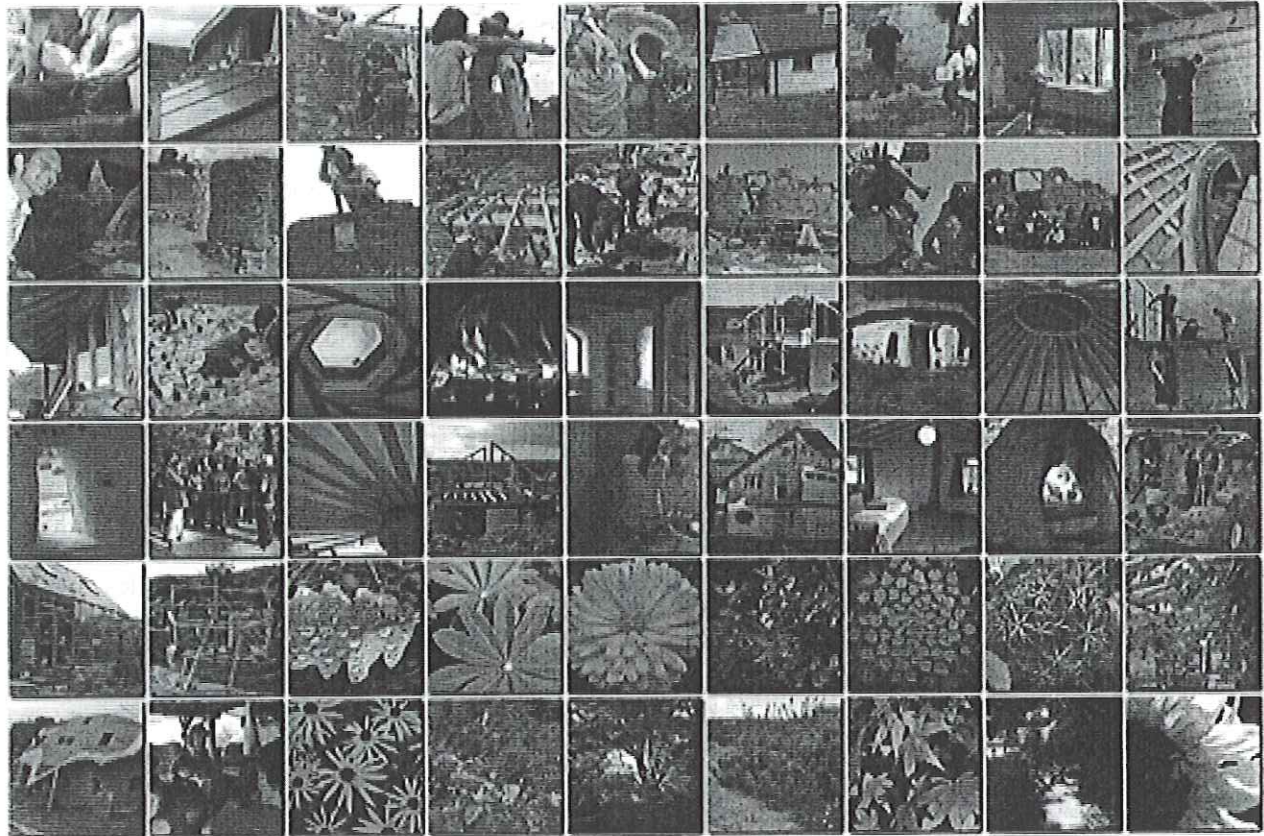
## **APPENDIX B: Kinsale Report**

We have chosen to include the original Kinsale Report in order to provide a visual presentation of what a complete EDAP could look like for Arcata. This report was used as a guideline for this project and serves as a visual representation of one community's ability to recognize the intersection of different sectors of their society – youth and community, tourism, economics and livelihoods, food, and so on. It is worth perusing in its entirety, and also serves as an excellent source of references for further reading on specific topics.

# Kinsale 2021

An Energy Descent

Action Plan – Version.1. 2005



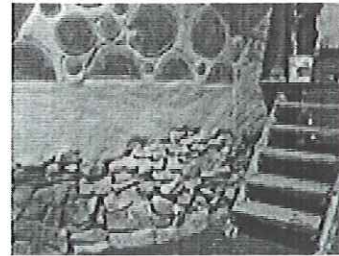
By Students of  
**Kinsale Further Education College**

Edited by Rob Hopkins



**Kinsale Further Education College**  
Oideachas Tré Eachtra





## Kinsale 2021 – An Energy Descent Action Plan

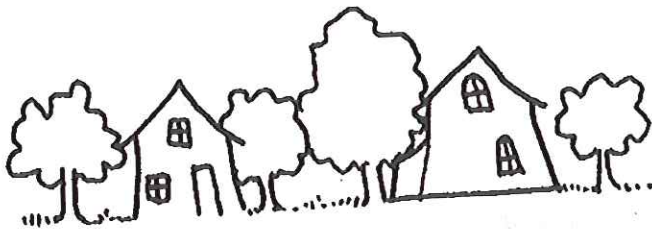
The report that you hold in your hand is a very important piece of work. It is the first attempt at setting out how Kinsale, a West Cork town of about 7,000 people, could make the transition from a high energy consumption town to a low energy one. The impending peaking of world oil production will lead to huge changes around the world, and Ireland will not be immune from this.

This report, prepared by permaculture students from **Kinsale Further Education College**, looks at how Kinsale could navigate this uncertain time by setting out a clear vision of how a lower energy future could be, and then identifying a clear timetable for achieving it. This is, as far as we know, the first time this has happened in Ireland. The report looks at most aspects of life in Kinsale, including food, energy, tourism, education and health. Also described is the process that produced this report, in the hope that it can be rolled out in other towns across the country.



Produced by:  
Kinsale Further Education College with the  
support of Kinsale Town Council, Kinsale  
Environment Watch and The Hollies Centre  
for Practical Sustainability.

All profits will go towards the implementation of this plan in Kinsale.



## **Acknowledgements**

This document is the result of the hard work and commitment of a number of people, all of whom deserve our appreciation and recognition. First and foremost, John Thuellier, principal of Kinsale FEC, under whose guidance the Practical Sustainability has taken root in Kinsale soil and been nurtured and allowed to flourish. Without his care and vision, it would still be but a dormant seed. Secondly all the students of the course over the years, all of whom have contributed in one way or another to its development, and to the document you now hold in your hand. Their passion and zeal for implementing practical solutions has always given me a real hope for the future. My fellow teachers at Kinsale FEC deserve recognition for their inputs into this project, namely Thomas Riedmuller, Paul O'Flynn, Phoebe Bright and Phillip Ward. Also to the people who gave their time towards helping to shape this work, Dr. Colin Campbell, Andy Langford, Graham Strouts, Tom Atkins, Dr. Stephen Gascoigne, Judith Hoad, Quentin Gargan and Clare Watson, Dominic Waldron, Caroline and Eddie Robinson and Xavier Dubuisson, as well as the thinkers who have inspired it, David Holmgren, Richard Heinberg, Bill Mollison, Howard Odum, Richard Douthwaite, David Fleming, Helena Norberg-Hodge and Patrick Whitefield. Thanks also to James Casey-Ellis of [www.smallgiant.biz](http://www.smallgiant.biz) for the graphic image on the cover. Finally the people of Kinsale who have greeted this project with great enthusiasm, and for whom, ultimately, we have produced this document.

**We would also like to extend our deep gratitude to Kinsale Town Council and Kinsale Environment Watch for their help with the publishing of this report.**

This document is dedicated to the memory of permaculture student and dear friend Andrew Long (1972-2004) and to peace in the world.





"If you want to build a ship, don't herd people together to collect wood and don't assign them tasks and work; but, rather, teach them to long for the endless immensity of the sea".

**Anon**

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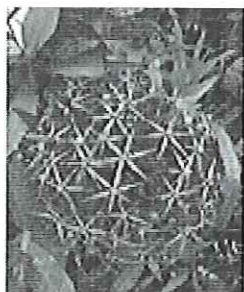
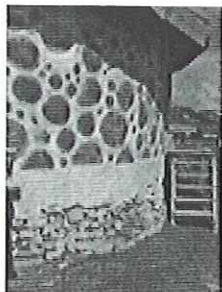
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"Traveller, there are no roads, roads are made by travelling"

**Spanish Proverb**





## The Practical Sustainability Course at Kinsale FEC

The **Practical Sustainability** course at Kinsale FEC is the first full-time 2 year permaculture course in the world. Developed over the last 4 years by permaculture designer and teacher Rob Hopkins, it offers students the opportunity to study permaculture and related topics in an inspiring setting and with some of Ireland's leading thinkers in the field of sustainability. The course is run under the auspices of Cork Vocational Education Committee, and leads to FETAC qualifications, a maximum of 8 of which can be undertaken in one year.



The modules covered are NCVA Level 2 awards, and are as follows – **Year One** – Permaculture Design, Sustainable Woodland Management, Organic Production Principles, Organic Horticulture and Field Ecology. **Year Two** – Applied Permaculture, Green Building, Starting Your Own Business, Community Leadership and Conflict Resolution.



The course is taught in a very accessible and student-centred way, with many site visits to projects of interest around Munster, and with a number of hands-on projects. In previous years students have built a strawbale house, planted an edible hedge, planted a woodland, made living willow sculptures, put up a polytunnel, planted a forest garden, made a pond, built an earth bread oven and built drystone walls. This year's has seen the completion of the cordwood amphitheatre, a beautiful new theatre built from local and natural materials. It was opened in May 2005 with a performance of 'The Merry Wives of Windsor' by the college's drama students. The whole emphasis of the course is on giving students a toolkit that they can use in their lives to make their homes, their communities and their world more abundant and sustainable.

Guest speakers on previous years courses have included the organic writer Joy Larkcom, community housing specialist Jose Ospina, renewable energy consultant Gerry Cunnane, Anne B. Ryan, author of 'Balancing Your Life', local tree folklorist Ted Cooke, reedbed engineer Feidhlim Harty, permaculture gardener Dominic Waldron, Davie Phillip of The Village eco-village project in Co. Tipperary and many more. The course contains assessed modules in all of the above areas, and also completion of the Year One Permaculture Design module will lead to the awarding of a certificate of permaculture design, an internationally recognised qualification in permaculture, the pre-requisite for doing the Diploma in Applied Permaculture.



*The course is taught by the following;*

**Rob Hopkins** has taught permaculture design in Ireland for 7 years and has taught widely around the country. He is a founding Director of The Hollies Centre for Practical Sustainability, and has become one of the country's leading pioneers of natural building.

**Paul O'Flynn** is an organic grower, landscaper and woodsman of over 15 years experience. Until recently he ran an organic market garden in Newcastle West, Co. Limerick, producing a range of organic produce for local Farmers Markets and restaurants.

**Philip Ward** is a local ecologist with an unrivalled knowledge of the ecology of West Cork. **Thomas Riedmuller** of The Hollies Centre for Practical Sustainability teaches conflict resolution and community leadership, and has done much to promote this area in Ireland. **Phoebe Bright** teaches Start Your Own Business. She runs Vivid Logic, a consultancy company which offers solutions on sustainable business, Information Technology, and website development. She is trained in the Natural Step which she also teaches.

To find out more or to receive an application form contact Kinsale Further Education Centre at [kinsalefurthered@eircom.net](mailto:kinsalefurthered@eircom.net) or ring ++353 (0)214772275.



# **The Kinsale Energy Descent Energy Action Plan – an introduction.**

**by Rob Hopkins, course co-ordinator, Kinsale FEC**

## **Oil**

Oil is an amazing material. It can power aeroplanes, run cars and lorries, heat our homes and generate electricity. It can be turned into a huge array of plastics and other polymers the world has never seen before, allowing us access to a great diversity of products our ancestors could only have dreamt of – what Kinsale's ancient mariners would have given to get their hands on fibreglass and silicon mastic! It can be manufactured into medicines; the vast majority of modern drugs are petrochemical-based. Oil is used to power the production of high embodied energy materials such as cement, aluminium, steel and glass, which we use to house ourselves. It has facilitated a huge growth in employment and economic wealth, created prosperity previous generations could only have dreamt of. It has allowed us to build an economy where we manufacture less and less and import more and more. We export butter and we import butter. We remove our native orchards and buy apples from the cheapest seller wherever that may be around the world. We have created a façade of wealth while at the same time wantonly discarding the very things that at any other time in history constituted real wealth - well managed diverse woodlands, local, vibrant, diverse food markets, local skills and traditions, local genetic diversity, breeds and varieties uniquely suited to local climate and soils.

However, while oil has brought undeniable benefits, these have come with a price tag. The dangers posed to us all by global warming are known to all at this stage, but suffice to say we have altered the climate in ways that are already causing chaos around the world, and it is only just the beginning. We live in a world where oil has allowed us to create a huge range of chemical compounds never seen in the world before, many of which have been linked to problems in human health and environmental pollution. It is estimated that we all carry about 400-500 chemicals in our bodies that did not exist sixty years ago. It has also allowed us to create a lifestyle where we live faster - we drive to shop, drive to work, drive to be entertained. We are more stressed and unsatisfied, we sit down to meals with our families less and less, we have less and less time to relax with friends, there is a growing sense that "something is missing".

## **The Peak**

As Dr. Colin Campbell's article below sets out, we are reaching a pivotal point in human history. At that moment, global oil production will peak, and from then on, demand will always exceed supply. There will never again be as much oil available as there is now. In short, we will reach (or have already reached) the point at which growth will become impossible. Our economies will need to make the transition to continual contraction rather than relentless growth. There will still be oil in the ground, but its extraction will become unfeasibly expensive and impractical, and our economies, designed on the fundamental assumption that they will always be growing, will have a traumatic period of adjustment to the new reality. The co-founder of permaculture, David Holmgren, likens our situation to being on the top of a mountain, from where we have views that no-one has ever seen before, but where the storm clouds are gathering. We have to navigate a way down the mountain while we still can, while we still have favourable weather and daylight. If we just allow the peak to happen, without planning for it, we will be in for a very rough ride.

## **Energy Descent – a planned way down**

There is an old saying, "*there are three kinds of people; one who watches things happen, one who makes things happen and one who says 'what happened?'*". We do have an alternative to just sitting back and allowing a deeply uncertain future to simply unfold. Our collective dependence on fossil fuels leaves us very vulnerable, and indeed is largely responsible for the instability we see in the world today. To quote Jan Lundberg of the Sustainable Energy Institute, "*real peace in a petroleum-fuelled world means rejecting petroleum dependence in all ways possible*".

As a country on the Western seaboard of Europe, far from centres of distribution or oil production, we find ourselves at the end of a very long supply line. Ireland imports over 90% of its food and almost the same proportion of our energy. Much of our building materials are imported, likewise our medicines and many other essential goods. Despite our great material prosperity and our 'booming' economy, we are very vulnerable to fluctuations in supply or international events. Given that we can see the unfolding picture as regards peak oil, it beholds us to act and to do something about it, but what? The late renowned ecologist Howard Odum coined the term 'energy descent' for the transition from a high fossil fuel use economy to a more frugal one, also coining the term 'a prosperous way down' to show that, if planned, this could be an opportunity for great inventiveness and abundance. This report is,

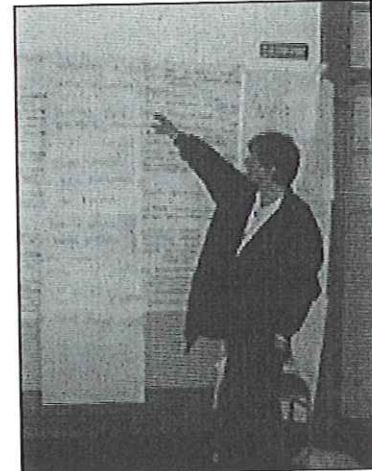


as far as we know, the first time an Energy Descent Action Plan has been prepared for a settlement anywhere in the world. It is the first time a community has looked realistically at how it might manage this transitional period to the benefit of all in a timetabled step-by-step way.

In his indispensable book on the subject, *'The Party's Over – oil, war and the fate of industrial societies'*, Richard Heinberg invites the reader to take a trip to a city centre and observe how energy is being used. How does energy underpin the work people do, where goods come from, transportation, heating and so on? He then suggests imagining the same scene with 10% less energy, then 25% less, then 50%, then 75%. Once we peak, we can expect an annual decline of available energy of around 2% each year. This exercise is worth taking the time to do. The results are quite sobering, and it is what second year students at Kinsale Further Education College have been doing over the last year. It can lead to your asking some very uncomfortable questions and coming up with some very surprising answers.

### **Kinsale 2021**

Students on the Practical Sustainability course at Kinsale FEC have spent the last year looking at what the realities of energy descent could mean for Kinsale, and what could be done about it. They have consulted with many of the leading thinkers in the field, and have researched the issue deeply. In February 2005 they held a one-day event entitled *"Kinsale in 2021 - Towards a Prosperous, Sustainable Future Together"*. To this event they invited many influential people in Kinsale, and began by showing them the recent award-winning film *'The End of Suburbia'*. The rest of the event was designed as a community think-tank, to enable the community to discuss issues raised by the film and brainstorm ideas about what could be done in the town to address them. The event was a great success, and gave the students many ideas and a feel for the community's hopes and fears. As a follow up to this, a conference is being planned for June 2005, called *'Fuelling the Future – the challenge and opportunity of Peak Oil'*, which will be addressed by many of the world's experts on the subject and on creative ways of adapting to it. We feel that these, together with this report, constitute very firm first steps towards a more holistic way of approaching Kinsale's future.



Ideas from the community being recorded and displayed during the Kinsale 2021 event

### **This Report**

The report you now hold in your hands is the result of the students' endeavours over the last year. It is a bold and visionary piece of work. It offers a timetable by which Kinsale can begin putting in place the elements it will need in order to navigate the troubled waters ahead. It is a roadmap to sustainability, to localisation, to abundance. Some of the ideas it contains may have occurred to you before, many of them may never have. Put together they offer a way forward, with Kinsale leading the way for the rest of the country, setting an example as the first town that didn't stick its head in the sand, didn't hope the problem would simply go away if ignored. Kinsale could gain great advantage by being the first town off the blocks, the first town to begin this process. However, ideas are nothing if they just remain words on paper. To quote Joel Barker, *"vision without action is merely a dream, action without vision just passes the time, vision with action can change the world"*. We offer this vision as the first step towards the action that will we hope will follow.

It is for this reason that the appendices of this report include an article exploring the concept for the Kinsale Sustainability Centre. This sets out how a Sustainability Centre could be established and what its functions might be. The Centre would have the broad remit of implementing this plan in the town, initiating many of the projects and initiatives set out here. We include it here in the hope that its inclusion might contribute to its realisation. We offer this report as a first step on a long, exhilarating and fascinating journey.

*Rob Hopkins is course co-ordinator of the Practical Sustainability course at Kinsale FEC. He is a founding Director of The Hollies Centre for Practical Sustainability and has taught permaculture and natural building widely around Ireland. To find out more visit [www.theholliesonline.com](http://www.theholliesonline.com).*



# The Dawn of the Second Half of the Age of Oil

by Dr. C.J.Campbell of ASPO Ireland.

The World is not about to run out of oil, but it does face the end of the First Half of the Age of Oil. That opened 150 years ago when wells were drilled for oil on the shores of the Caspian and in Pennsylvania. The cheap, convenient and abundant energy, it supplied, led to the growth of industry, transport, trade and agriculture, which in turn allowed the population to expand six-fold exactly in parallel with oil. Lastly, it created huge amounts of financial capital, which in turn led to the subject of classical Economics. In short, commercial banks lent money in excess of what they had on deposit on the assumption that tomorrow's expansion provided the collateral for to-day's debt. In addition the control of world trading currencies, formerly the pound sterling and now the US dollar, provided a huge unseen tribute that flowed to the issuing country, being the primary asset of Empire. This system controls the very fabric of the modern world, its business and indirectly its politics, but is due to collapse as the energy supply that made it possible heads into decline.

Oil is a finite resource formed in the geological past. In fact, the great bulk of current production comes from just two brief epochs of extreme global warming 90 and 150 million years ago. Algae proliferated in the warm sunlit waters to provide the organic material, which fell to the depths of stagnant rifts that formed as the continents moved apart. It was in turn buried beneath sands and clays until it was heated enough for chemical reactions to convert it into oil. Gas was formed in a similar way, save that it was derived from vegetal remains as found in the deltas of tropical rivers. Ordinary oil also broke down into gas if over-heated by excessive burial. Once formed, the oil moved generally upwards through the rocks to collect in structural traps containing porous reservoirs, capped by effective seals of salt or clay.

As every beer-drinker knows, the glass starts full and ends empty. He further understands both that the quicker he drinks it, the sooner the glass will be empty and that every bar has a closing time. So, how far along the oil depletion curve are we? The first step in answering this question is to ask how much has been found so far and when it was found, because production has to mirror discovery after a time-lapse. Extrapolating the discovery trend gives a good indication of what is left to find. These sound like simple questions, being just a matter looking up the data, but as we dig into the issue, we find a minefield of confusion, obfuscation and disinformation.

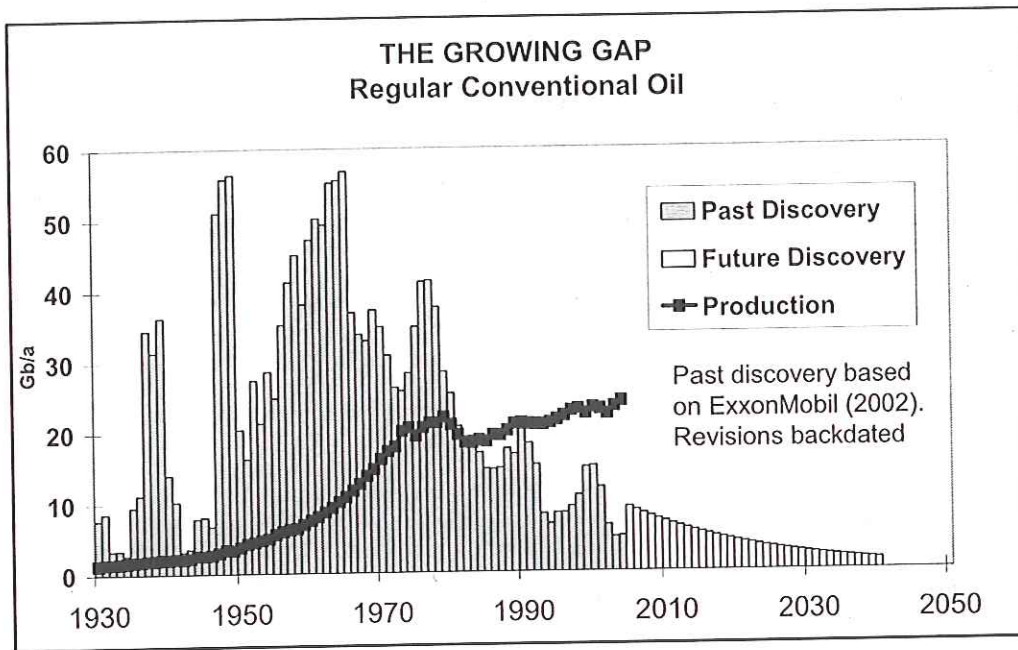
Firstly, there is confusion over what to measure. There are many different categories of oil, each with its own costs, characteristics and, above all, depletion profile. Digging up a tar sand in Canada with a shovel is not the same as producing oil from a free-flowing Middle East well. Some types are cheap, easy and fast to produce, whereas others are the precise opposite.

The reporting of reserves is the second major area of confusion. Reserves are financial assets, subject to strict stock-exchange rules. They were designed to prevent fraudulent exaggeration, but smiled on under-reporting as laudable commercial prudence. In practice, the oil companies reported just as much as they needed to report in order to deliver satisfactory financial results, building up for themselves a useful stock of unreported reserves to tide them over lean discovery years and cover any temporary setback around the world. As a result, reserves have been progressively revised upwards, giving a comforting but very misleading impression of steady growth. But those days are now over, as Shell's recent experience of having to radically reduce its reserves confirms.

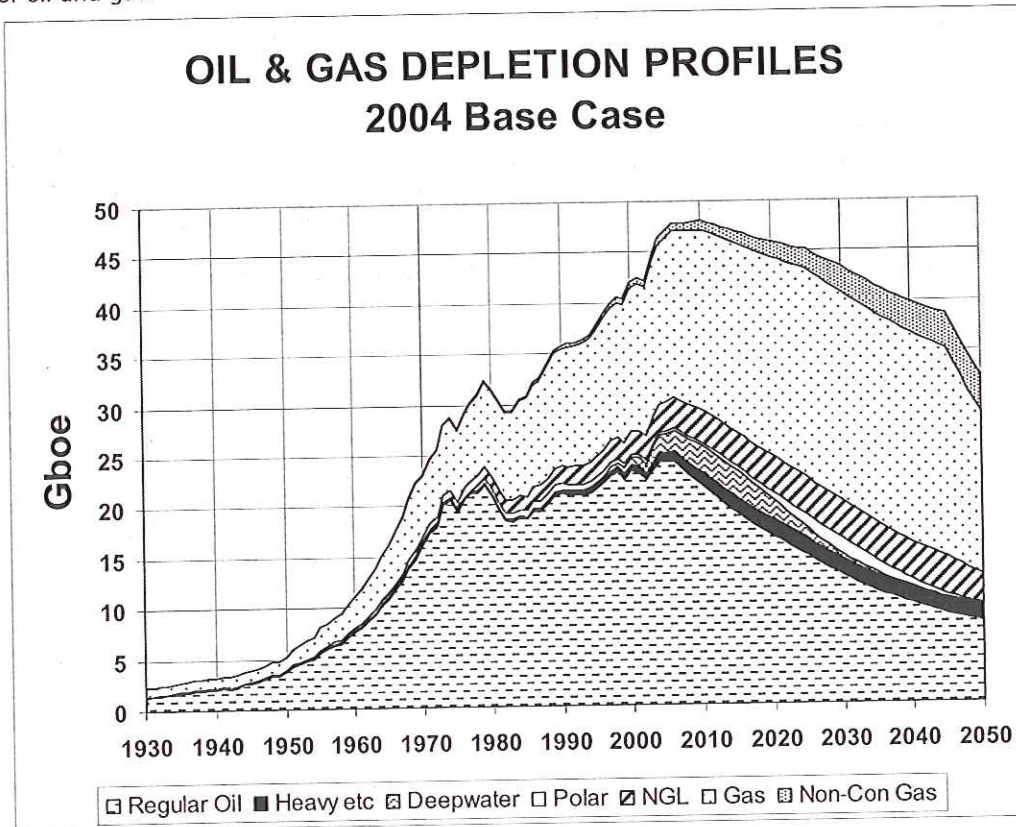
OPEC, for its part, announced enormous over-night reserve increases in the late 1980s. It now transpires that these countries in fact started reporting the total found, not the remaining reserves as commonly supposed, explaining why the official numbers have barely changed since then despite production. It made sense to have a fairly static number from the standpoint of OPEC production quotas.

Unravelling all of these confusions so far as possible indicates that World discovery has been in decline since 1964. It has been declining despite a worldwide search always aimed at the biggest and best prospects; despite all the many technological advances; and despite a favourable economic regime whereby most of the cost of exploration has been offset again taxable income. It means that there is no good reason to expect the downward trend to change direction, which by extrapolation gives a good indication of what is left to find. Figure 1 shows the discovery record, based on properly backdated industry data, published by ExxonMobil.





The World started using more than it found in 1981, and last year it found about one barrel of so-called *Regular Conventional Oil* for every five consumed. This term is used to describe the cheap and easy oil that has provided most to-date and will dominate all supply far into the future. It excludes oil from coal and shale, bitumen and heavy oil, deepwater and polar oil, as well as the liquids that are extracted from gasfields in specialised plants. The production of oil in any country normally begins to decline when half the total available has been extracted. The following graph shows the approximate status of depletion for all the different categories of oil and gas.



In short, the Second Half of the Age of Oil now dawns. The current high oil prices mark the onset of this new epoch when there is neither material spare capacity nor hope of securing any. Many claims are made that technology will come to the rescue and extract a higher proportion of the oil in the rocks, but this is largely wishful thinking. The oil industry already uses very advanced methods achieving optimal recovery. Natural Gas is less depleted than oil



but has a very different depletion profile simply because it is a gas not a liquid. In an open market, the end of production when it comes, comes abruptly and without price signals, as the United States has discovered.

The transition to decline will be a time of great international tension as the countries of the world, led by China and the United States, vie with each other for access to supply, most of which lies in just five countries bordering the Persian Gulf. Few doubt that the Anglo-American invasion of Iraq, which cost more than 100 000 Iraqi lives, had a certain oil agenda, whatever the declared pretexts. Some hope that opening the Middle East to western companies would solve the problem, but they fail to grasp that most of the oil in the Middle East lies in a small number of very large fields found long ago. These countries are having to run faster to stand still as they desperately try to offset the natural decline of the ageing giant fields. Besides, if production were to be stepped up in the Middle East by massive investment and superhuman effort, it would simply make the peak higher and the subsequent decline steeper. There is an irony about depleting a finite resource: *the better you are at doing the job, the sooner it ends*".

The Second Half of the Age of Oil will be characterised by a decline in the supply of oil, and all that depends upon it, including eventually financial capital. That speaks of a second Great Depression and the End of Economics as presently understood. It is an unprecedented discontinuity of historic proportions, as never before has a resource as critical as oil become scarce without sight of a better substitute. All countries and all communities face the consequences of this new situation. There is no solution in the sense of finding enough oil and gas to prolong the past epoch, but there certainly are responses by which to plan and prepare. It is not difficult to formulate some useful steps:

- 1) Establish an entity to properly evaluate the real situation so as to avoid being misled by erroneous forecasts promulgated by international organisations that are under political pressures.
- 2) Undertake a massive programme of public education, so that everyone may become more energy conscious and find ways to be less wasteful. Eventually, an efficiency factor should be incorporated into utility charges to penalise the wasteful and encourage the efficient. The transport system in particular demands urgent attention.
- 3) Encourage the rapid development of renewable energies from wave, tide, solar, wind, and other sources, including the growing of energy crops.
- 4) Re-evaluate the nuclear option, including for example the new small scale fail-safe gas-cooled system, such as the SGR-2004.
- 5) Cut demand to match World depletion rate, currently running at only 2.5% a year, in accordance with the so-called Rimini Protocol, which is to be addressed by world leaders in Rimini in 2005. If implemented, it would have the following main effects:
  - a) World oil price would moderate by putting demand in balance with supply, which would allow the poorer countries to afford their minimal needs. This in turn would prevent excessive financial flows to the Middle East, further destabilising the world financial system.
  - b) Force the consumers to better face the reality imposed by Nature

This is not a doomsday scenario. Indeed, countries which adopt appropriate measures could achieve great competitive advantage by being better prepared than those that continue to live in the past. The new age that dawns conjures up an almost romantic image of smiling people living in harmony with themselves, each other and their environment. Thriving local communities and markets offer a more rewarding future than unloading consumer durables from a Chinese container ship. But the transition will be difficult and very challenging.

*Dr Colin Campbell worked in the oil industry for 30 years and is the founder of the Association for the Study of Peak Oil. He lives in Ballydehob.*



## The Scenario of This Report

**Rob Hopkins**

This report takes the scenario painted by Dr Colin Campbell in his article as its opening premise. If he is right (and many believe his predictions to be by far the most reliable currently available), by 2021 Kinsale will have only about one half of the fossil fuel available to it that it currently has. This has implications for every aspect of life in Kinsale.



The headings below hopefully cover most aspects of life in Kinsale. Each section follows the same format. It begins with a brief look at the current situation in Kinsale with regards to the subject in question. This attempts to summarise the issues involved in a way which is both succinct and relevant. This is then followed by the Vision. This is our idea of how Kinsale could be in 2021, if the steps suggested have been taken. This aims to give you an idea of the potential result of the recommendations, and how it could actually be a step forward from where we are now rather than a retreat.

Then come the actual recommendations. These are laid out in chronological order, from the present day until 2021. The proposals are practical and realistic, and where their implementation involves the input of a particular body this is included. The proposals are laid out in a clear and easy-to-read format so that they are easy to follow. Each area is then concluded by a section of resources, places you can find out more about some of the ideas that have been discussed. These include books, websites, organisations and so on. Please do follow up any areas that interest you, you never know where they might lead!

This report is not intended to be comprehensive, please view it is a first draft being put out into the community for consultation. It is not the work of professionals. It may occasionally be guilty of naivety, being misinformed or overly optimistic, but it is our attempt at starting this process rolling. You can look upon it as being the first step in a long process, offered to you warts'n'all for discussion, rather than a comprehensive document. It will be used as the basis for next year's students to revise and add their own updates to, based on further and deeper community consultation. If you have any thoughts or views on what you have read, you can either write to the college, or post your thoughts on our website, [www.fuellingthefuture.org](http://www.fuellingthefuture.org). There you will find a bulletin board where you can post your views, and these will be taken into consideration when we revise it next year. We hope that you will enjoy this document and that it may lead to the change to which it aspires.

### **Further Peak Oil Reading**

Darley, Julian *High Noon for Natural Gas* Post -Carbon Institute  
Douthwaite, Richard (ed.) *Before the Wells Run Dry- Ireland's transition to Renewable Energy* Ed. Feasta 2003  
Hartmann, Thom *The Last Hours of Ancient Sunlight* Three Rivers Press (US) 2004  
Joplin, John and Douthwaite, Richard (eds.) *The Feasta Review* Green Books/FEASTA 2001  
Kunstler, James Howard *The Long Emergency- Surviving the Converging Catastrophes of the 21<sup>st</sup> Century* Atlantic Monthly Press 2005  
Mason, Colin *The 2030 Spike: Countdown to Global Catastrophe* Earthscan 2003  
McKillop Andrew (ed) *The Final Energy Crises* Pluto Press 2005  
Savinar, Matt, J.D. *The Oil Age is Over- What to Expect when the World Runs out of Cheap Oil 2005-2050* Morris Publishing 2004

### **Further What-We-Can-Do-About-It Reading...**

Hargroves, Karlson & Smith, Michael. *The Natural Advantage of Nations – business opportunities, innovations and governance in the 21<sup>st</sup> Century.* Earthscan 2005  
Holmgren, David. *Permaculture – principles and pathways beyond sustainability.* Holmgren Design Press 2003  
James, Sarah & Lahti, Torbjorn. *The Natural Step for Communities – how cities and towns can change to sustainable practices.* New Society Publishers 2004  
Whitefield, Patrick. *The Earth Care Manual – a permaculture handbook for temperate climates* Permanent Publications. 2004



## Food

*Deirdre Barry, Rob Hopkins*



### The Present

Kinsale is known widely as the Gourmet Capital of Ireland. While it does indeed host many fine restaurants, it is as dependent on imported food as anywhere else in the country. Over 90% of the food consumed within Kinsale comes from outside the area, and this percentage is rapidly increasing as imports become cheaper. Farmers are being paid to let their land do nothing, whereas it could be growing food for local markets. In the near future, when the reality of Peak Oil makes itself increasingly apparent, we will discover that food security is not only a Third World issue. As the recent fuel crisis in the UK showed, supermarkets only contain 3 days worth of food at any given time, as the old saying goes 'civilisation is only 3 meals deep'. Much of what we consume has travelled great distances, is saturated with pesticides and other chemicals, and is grown in ways that deplete rather than build soils. Even if we choose organic, there is a very high chance, if we shop in Kinsale, that the organic food we are buying has been grown overseas, with the resultant environmental impacts of transporting it over long distances to reach us. Food is one of the basic cornerstones of life, as oil prices steadily increase, we will discover how dependent we have become on a totally undependable system.

### The Vision

By 2021, Kinsale has made the transition from dependency to self reliance. Food growing has become an integral part of life in the town. Lawns are a thing of the past, lawnmowers now hang in pubs as old ploughs did in 2005, relics of a bizarre form of land use that people used to practice in the dying days of the Oil Age. All landscaping in the town comprises of edible plants, fruit trees line the streets, all parks and greens have become food forests and community gardens, and every back garden contains a food garden. The resurgence in food production had great benefits for the community. People rediscovered old varieties, and began once more to save and exchange seeds. As peoples' diets improved with more and more fresh vegetables, and people enjoyed the exercise of making a garden, so health increased and common illnesses decreased. People are now more aware of the seasons, and a vibrant local economy in local honey, vegetables, fresh fish and poultry and fruit has now replaced the monoculture of the supermarket so popular in 2005.

### Practical Steps:

#### 2005

- The Kinsale Sustainability Centre appoints a Local Food Officer, with the brief of promoting local food. His/her first job is to organise an Open Space Think Tank event, inviting all those involved in food in Kinsale to discuss the recommendations in this report and to add new ones
- A Local Food Partnership is formed as a follow up to this meeting. Made up of interested parties and representatives of the various sectors in Kinsale with an interest in food, the Partnership serves a few roles. Firstly it is useful for ongoing discussion about food issues, secondly it facilitates the design of local food networks, and thirdly it gives profile to this work.

#### 2006

- The Local Food Officer, together with the Local Food Partnership, produces a Local Food Action Plan for Kinsale, which sets out practical steps towards local food in Kinsale. A summary of this report is produced, together with a Directory of Local Food, listing all the local producers and growers in the Kinsale area.
- The Local Food Officer works with the local schools to change their procurement policies as regards food. Schools undertake to purchase 60% of their food from local producers, of which 40% is organic.



- The Local Food Partnership forms a Steering Group to begin to move Kinsale towards being a Slow Food town. They arrange a trip to existing Slow Food towns elsewhere in Europe to get a feel for their experience.
- Kinsale FEC adds a module to the Practical Sustainability course in Organic Market Gardening, so as to give people the commercial as well as the practical skills needed for making a living growing food within Kinsale.
- Identify a number of sites for orchards around Kinsale, and plant them with local school children, using rare West Cork varieties where available.

## 2007

- The Slow Food Steering Group formally applies to make Kinsale a Slow Food Town. This change means that the focus for Kinsale's restaurants stays on good quality food, but shifts subtly to add an emphasis on local, organic and high quality food. It also puts an emphasis on local recipes and delicacies, and helps reconnect people to their food heritage. The Slow Food group introduce a Kinsale Slow Food label, which restaurants which meet the criteria can be awarded. The scheme is launched with a Slow Food banquet in Kinsale Town Hall.
- The energy behind Kinsale's becoming a Slow Food Town leads to the obstacles to a Kinsale Farmers' Market being overcome. The Farmers Market is held every Friday, and brings local food to the community, and is a celebration of local food culture. As has been the experience of many other places, the Farmers Market creates many niches for small growers and is a real social focus for the town.
- Kinsale Town Council introduces reduced rates for businesses using more than a stated percentage of locally produced food.
- Kinsale Hospital introduces a Local Food Procurement policy, sourcing as much of its food locally as possible.
- Kinsale Town Council brings in new guidelines for its grounds maintenance staff. They are all required to undertake a permaculture design course. Wherever new trees are to be planted, they must be productive tree species. Especially recommended are nut trees such as walnut and sweet chestnut, as well as the wide range of fruiting trees. New guidelines are also introduced for developers, all new planning applications must be accompanied by a full edible landscaping plan. The new guidelines create employment opportunities for students from the Practical Sustainability course at Kinsale FEC, who are uniquely qualified to do this work, a number of whom set up design consultancies in order to serve this new demand.
- Students from Kinsale FEC begin working with local schools to design and install food gardens in each school.

## 2008

- Kinsale becomes recognised as Ireland's first Slow Food Town. A Slow Food Festival is held to celebrate. The high profile of being the first Slow Food town allows the Town Council to source funding to initiate a number of urban food growing projects. These include;
  - A community food garden in the garden in front of the town hall
  - A 1601 Fruit Trees for Kinsale initiative, which makes free fruit trees available to residents of Kinsale, as well as an aftercare advice service for people in how to take care of them.
  - A proposal for the current Supervalu car park site to transform it into a mini-Eden Project, a glass dome incorporating a 'Living Machine' waste water treatment system, a café, a subtropical fruit arboretum, and food growing. This structure would become a major attraction, and would be a ground breaking example of a tourist attraction designed to bring great benefit to a town beyond simply attracting tourists.
  - An 'EasyGarden' scheme, where salad and vegetable plants are propagated in trays at a central point and then passed on to people to plant directly, saving them the perceived 'hassle' of growing their own plants from seed.



- A programme to seek out any rare apple or other fruit varieties in Kinsale so that cuttings can be taken and the varieties can be preserved.

#### **2009**

- The Slow Food label rolled out to include B&Bs. By meeting certain criteria they are allowed to call themselves a Slow Bed and Breakfast (or Bed and Slow Breakfast... (!)). Criteria are established for how they would qualify. One is that they provide local breakfasts, with all the components of the breakfast being sourced locally. Switching all of Kinsale's B&Bs over to the Slow Food label would create a considerable market for local produce.

#### **2010**

- By 2010, the various changes in procurement from schools, the hospital and B&Bs and also the now well-established Farmers Market have begun to create significant market opportunities in Kinsale for people to produce local food. Poly tunnels start popping up on open ground around Kinsale, and the sound of chickens is once again heard in the town. West Cork LEADER make grants available to people starting up small scale food production, and also offer business support.
- As part of the Slow Food process, and in the interest of promoting Kinsale as a Sustainable Town, Kinsale Town Council bans the use of herbicides along road sides in the town.

#### **2011**

- Groups of farmers with land around Kinsale get together and form an organic local food co-op. With the help of Teagasc, they convert their land to organic, and work together to grow food specifically for the local market. They focus on bulkier crops such as potatoes, carrots and parsnips, to complement the salads and more easily transported crops being grown nearer to or in the town.
- The farmers co-op also turns its dairy herds organic, and begin to value add the milk they produce by making cheese and butter on the farm for local markets. The co-op also, with all its member farmers, takes a fresh look at all of its practices in the light of Peak Oil. This leads to lower stocking densities, and a widespread adoption of the practice of Foggage Farming, as developed at Fordhall Farm in the UK (see Resources). In this system all livestock are 100% Free Range and graze the species-rich chemical free pastures all year round (there would be a certain conversion period to reseed pastures and to build up the required root mat in the sward). No routine antibiotics or growth hormones are used. Stock is not housed through the winter, so there is no need for any additional concentrates. Hardier cattle varieties are used.
- The Farmers Co-op and the local growers get together to design a Community Supported Agriculture Scheme, whereby customers can order food directly from local sources. A box of mixed produce is delivered on a weekly basis to homes in the town. This also allows the customer to make a direct link with the growers, so they know where their food comes from.

#### **2012**

- A 'Tasty Towns' competition is introduced as a national challenge to towns to see which town can grow the most food in the most imaginative way within its town boundaries. Other criteria looked for are the most imaginative ways of incorporating the widest cross section of society in food growing and the revival of old varieties and traditional techniques. It is co-ordinated and run in a similar way to the Tidy Towns competition, but does a great deal to promote local food growing in Ireland. Its central office is based in the Sustainability Centre in Kinsale.
- Training is offered to the Kinsale community on innovative niche markets for food production. These include organic mushrooms such as shiitake, unusual vegetables, and innovative ways of growing grains. These



workshops are hosted at Kinsale FEC and funded by Bord Bia and West Cork LEADER.

### **2013**

- A laboratory is set up producing spores for gourmet and medicinal mushrooms, modelled on the Humungous Fungus company in the UK (see Resources below). They sell spawn and also set up a series of growers around the region growing mushrooms on. These mushrooms have amazing health benefits, indeed the majority of medicines in China and Japan are made from mushrooms.
- In order to make it easier for individuals to grow their own food, the 'EasyGarden' scheme links with the Community Composting Scheme, and offers a whole package, teaching people how to very easily make no-dig gardens as well as providing them with the plants to fill the beds.
- Apple Day begins to be celebrated as an annual festival in Kinsale, celebrating Kinsale varieties and reconnecting people with the history of the apple in Kinsale.

### **2014**

- In the interests of energy efficiency and also of promoting local food growing, grants are made available for people to put lean-to conservatories on their houses, provided they meet certain design criteria, for example they are not to be heated, they are to be thermally isolated from the rest of the house, and they should be on the south side of the house. Help is then given with designing food growing inside and identifying suitable species.

### **2015**

- A 'MatchMaking Service' is set up to get around land access issues in Kinsale. A number of younger more physically able people live in flats and in houses with no gardens, while many older people live in houses with gardens they are no longer capable of looking after. Many of these older people would love to see their gardens being used in a productive way, perhaps in exchange for a 'vegetable tax', a small proportion of the produce. The Matchmaking Service would co-ordinate this, make introductions between people and working as an intermediary in the case of any problems arising.

### **2016**

- An aquaculture system is designed for the town. Being a natural bowl, Kinsale is in many ways ideal for an urban sustainable aquaculture system. Water is channelled into a series of ponds which are used to raise freshwater fish, such as trout. This is carefully designed so as to also allow for other uses such as recreation and the production of other crops such as watercress and water chestnuts.
- The orchards planted in 2007 begin to come into regular production. A press is set up in the town to facilitate the production of apple juice, cider and cider vinegar.

### **2016 – 2021**

- Assisted by the various organisations now in place and the highly visible benefits of local food growing, the move towards a culture of local food growing is well under way. Kinsale is well ahead of the rest of the country in not only having put in place the infrastructure of a local food economy, but also holding a number of events to celebrate it. The ecological aquaculture system is put in place, bringing the sound of running water to the streets of Kinsale as well as high quality fresh fish. The glasshouse project for the Supervalu car park site in Kinsale is granted planning permission and also funding, and work begins on its construction. Kinsale now has an in-built resilience to enable it to deal robustly with shocks and shortages in the food supply system.



## Resources

### Books

Bell, Graham *The Permaculture Garden* Permanent Publications 2004  
Fern, Ken. *Plants for a Future – edible and useful plants for a healthier world* Permanent Publications 2002  
Jeavons, John *How to Grow More Vegetables Than You Ever Thought Possible on Less Land Than You Could Possibly Imagine* Ten Speed Press 1995  
Norberg-Hodge, Helena et al., *Bringing the Food Economy Home* Earthscan Books, ISEC  
Whitefield, Patrick. *The Earth Care Manual – a permaculture handbook for Britain and other temperate countries* Permanent Publications 2004  
Stickland, Sue, *Back Garden Seed Saving: Keeping Our Vegetable Heritage Alive* Ecologic Books 2003

### Internet

An tIonad Glas – Organic College, Drumcollogher, Co. Limerick [www.organiccollege.com](http://www.organiccollege.com)  
BBC Gardening with Children [www.bbc.co.uk/gardening/children](http://www.bbc.co.uk/gardening/children)  
Bendalls Farm (UK) [www.bendallsfarm.com](http://www.bendallsfarm.com)  
Biodynamic Gardening and Farming Association (US) [www.biodynamics.com](http://www.biodynamics.com)  
Bord Bia, [www.boardbia.ie](http://www.boardbia.ie)  
Church, Norman *Why Our Food is So Dependent on Oil* (an excellent article on the oil dependence of our food supply system) - available online at [www.fromthewilderness.com/free/ww3/040605\\_world\\_stories.shtml](http://www.fromthewilderness.com/free/ww3/040605_world_stories.shtml)  
Demeter – the biodynamic certification organisation [www.demeter.net](http://www.demeter.net)  
Federation of Irish Beekeeping Associations [www.irishbeekeeping.ie](http://www.irishbeekeeping.ie)  
Fordhall Farm, Shropshire, UK. where the Foggage Farming system was pioneered. [www.fordhallorganicfarm.co.uk](http://www.fordhallorganicfarm.co.uk)  
Gardening with Schoolkids [www.4children.org/news/798bugs.htm](http://www.4children.org/news/798bugs.htm)  
Good Gardeners Association – promoting no-dig methods (UK) [www.goodgardeners.org.uk](http://www.goodgardeners.org.uk)  
Humungous Fungus Company, in Wales, who have pioneered small scale organic gourmet mushroom production. [www.humungus-fungus.co.uk](http://www.humungus-fungus.co.uk)  
Irish Seed Savers Association [www.irishseedsavers.ie](http://www.irishseedsavers.ie)  
Irish Seed Savers Association [www.irishseedsavers.ie](http://www.irishseedsavers.ie)  
Journey to Forever – a wonderful site full of interesting ideas [www.journeytoforever.org](http://www.journeytoforever.org)  
Organic Centre, Rossinver, Co. Leitrim [www.theorganiccentre.ie](http://www.theorganiccentre.ie)  
Permaculture Association (UK) [www.permaculture.org.uk](http://www.permaculture.org.uk)  
Plan Organic – a great Irish organic resource [www.planorganic.com](http://www.planorganic.com)  
Pretty, J.N. et al. *Farm Costs and Food Miles: An Assessment of the Full Cost of the UK Weekly Food Basket*, in *Food Policy* 30 (2005), pp.1-19. [www.elsevier.com/locate/foodpol](http://www.elsevier.com/locate/foodpol)  
Ragman's Lane Farm (UK) [www.ragmans.co.uk](http://www.ragmans.co.uk)  
Slow Food Ireland, [www.slowfoodireland.com](http://www.slowfoodireland.com)  
Sustain, [www.sustainweb.org](http://www.sustainweb.org) Their website contains a wealth of very useful articles on the practicalities of putting global food structures in place. Essential.  
The Edible Schoolyard [www.edibleschoolyard.org](http://www.edibleschoolyard.org)

### Sources of Unusual Plants and Organic Supplies

The Herb Garden, Co. Dublin [www.theherbgarden.ie/homepage.htm](http://www.theherbgarden.ie/homepage.htm)  
Peppermint Farm and Garden, Co. Cork [www.peppermintfarm.com](http://www.peppermintfarm.com)  
Future Forests, probably the best tree nursery in the country (Co. Cork) [www.futureforests.net](http://www.futureforests.net)  
Fruit Hill Farm, Co. Cork [www.fruithillfarm.com/contact.shtml](http://www.fruithillfarm.com/contact.shtml)  
Agroforestry Research Trust [www.agroforestry.co.uk](http://www.agroforestry.co.uk)  
Cool Temperate – plants and services for a sustainable world [www.cooltemperate.co.uk](http://www.cooltemperate.co.uk)  
Future Foods - seeds and tubers of many trees, shrubs, vegetables and herbs, many hard to find elsewhere. Also sell mushroom spawns. I challenge you to read their incredible catalogue and not buy anything! [www.futurefoods.com](http://www.futurefoods.com)  
Organic Centre, Rossinver, Co. Leitrim [www.theorganiccentre.ie](http://www.theorganiccentre.ie)  
Plants For A Future - Resource and information centre for edible and otherwise useful plants [www.scs.leeds.ac.uk/pfaf/](http://www.scs.leeds.ac.uk/pfaf/)

## Youth & Community

*Michael O'Callaghan, Rob Hopkins,  
Michelle Walsh, Carmel Geary*



### The Problem

Kinsale youth are admirable. They are lively, sincere and concerned, and they represent the positive energy of the future. However, Kinsale like any other town or urban centre, has challenges with the untapped and often mis-directed energy of youth. These misaligned energies find expression in socially and self-destructive behaviour, i.e. vandalism, alcoholism, drug-abuse, joy-riding, noise pollution, loitering and nuisance. While many excel at sports and activities, more are sedate, house-bound and lost in high-tech Playstations, TV, etc. There are fewer opportunities to engage their energies in creative, social activities. Their problems are often encapsulated in the moan: "Nothing to do and nowhere to go". Peak Oil will affect today's young people in many ways; diminishing opportunities, lower material standards, reduced work opportunities and thwarted ambitions. As these impacts begin to be felt, young people could become increasingly bewildered and angry, lacking even the basic skills for self-reliance and looking for others to blame.

### The Vision

By 2021 young people are the vibrant energy driving the cultural shift well underway in Kinsale. They are empowered, skilled and focused, and their ideas and opinions are reflected in the local political process. Their schooling has been re-oriented around core ecological values, their school environments having become as sustainable as possible. They represent the future, and they are supported by the wider community in their building of a more sustainable future.

#### 2006.

- An Opinion Forum will be organised for Kinsale's young people. This will be co-ordinated by Kinsale FEC's second year permaculture students, and will aim to identify areas of interest to young people in Kinsale, as well as to introduce the concept of visioning the kind of future they want. The event will be celebratory, designed so as to attract young people, and will enable the students to identify stepping stones through young peoples' interests.

#### 2007

- Launch a Youth Photography Competition, with a prize for the best 2 photographs, one which best illustrates a positive vision for how the future could be, and another that best illustrates the worst case scenario of how things could be.
- Coordinate and host an International Youth Conference and Festival. This conference would aim to build a positive self image for Kinsale's young people, and would identify the movers and shakers among young people. The event's main speaker would be Lewisham's Youth Mayor, Emanuel Hawkes.
- The conference would produce a Youth Manifesto for Kinsale.
- Offer a Permaculture Design Course free to young people from the town.
- Local schools begin to introduce Green Work Experience for their Transition Year students, placing them for a week or two in a business with green intentions
- Launch a Youth Movie Circle, to watch a film each week and discuss it afterwards, with a high degree of sustainability related films, such as The End of Suburbia, The Corporation and SuperSize Me.



## **2008**

- A presentation to Kinsale Town Council of the Youth Manifesto for Kinsale.
- Launch the Kinsale Young Mayor Training. This would include training in citizenship issues, manifesto writing and what they would spend the mayor's budget on. Anyone wanting to run for the position of Mayor would need to undertake this training.
- Launch Community Notice board on the Kinsale Links website (see Livelihoods and Economy above).

## **2009**

- Elections for Kinsale's Youth Mayor, elected by mobile phone and/or ballot vote. Candidates are invited from anyone between 14 and 18 living in
- The successful candidate would then specify what they plan to spend their €10,000 budget on over the next year. He/she would also have a seat on the Kinsale Town Council.

## **2010**

- Open Kinsale's Youth Café, funded by Cork County Council. This space would function as a café, but would also be used as a cyber centre, for Poetry Slams, graffiti competitions, cartoon exhibitions, chess clubs, a drop-in advice centre, talks, one act play competitions and much more.

## **2011**

- Continuing support for the above
- Kinsale Youth Mayor re-elected on an annual basis
- Kinsale hosts the World Youth Conference - putting Kinsale on the international map as a place where young people are becoming more central to the designing of a more sustainable future.

## **2012**

- Youth Exchange Programme. As a follow up to the World Youth Conference, a series of international exchanges are organised.

## **Resources**

### **Internet**

Young Mayor For Lewisham - [www.youngmayor4lewisham.co.uk](http://www.youngmayor4lewisham.co.uk)

## Education

*Diana Good & Pernilla West*



### The Present

Education in Kinsale, like all of Ireland, is focused towards academic achievement. This is understandable in the current economic system. The training of future workers is essential. The end of cheap oil however, will bring a new set of difficulties and realities that need addressing. We will need to explore new ways of educating. The whole community needs to learn a combination of new ways of thinking, designing and living as well as reviving old skills and crafts to deal with the reality of decreasing fossil fuels. Education of the community starts at home and also in the schools.

### The Vision

By 2021 education has been reorganised around key ecological principles. The schools themselves are model sustainable systems, generating no waste and being very energy efficient. The daily school routine is a combination of academic and practical, with young people learning basic skills of food production, sheltermaking and self reliance alongside their other studies. Every school has a garden and produces much of the food served in its canteen. Students leave school equipped with the skills they need for the new emerging post-carbon world they are about to go out into, rather than the outdated 20<sup>th</sup> century fossil fuel rich world. Their education has left them empowered and skilled, and ready to make an active contribution to this exciting new reality.

### Practical Steps

#### 2006

- Host a Think-Tank for teachers. Show the film *The End of Suburbia*, discuss the implications this has for education in Kinsale.
- Request local people with traditional skills and knowledge to offer training/courses to local school children, as a way of keeping these skills alive within the community
- Highlight issues regarding health and food through initiating projects in the local schools to begin growing organic food on the grounds. This has many benefits, in terms of exercise, healthy food, environmental education, learning about plants and soils, and giving students a basic skill for self reliance
- Work with school kitchens to ensure that all schools produce wholesome meals for students and teachers to enjoy.
- Set up compost systems in all Kinsale schools and run training workshops in composting for school staff and interested parents.

#### 2009

- Develop a Sustainability Action Plan for each school, looking at energy use and food in the school, as well as other areas where the school could become more sustainable. This Plan could be undertaken by students at Kinsale FEC as a project, or by the school students themselves as a project supported by Kinsale FEC.
- Each school in Kinsale will have an Energy Awareness Week where they are given  $\frac{3}{4}$  less energy to use for a week. This could be an opportunity to re-evaluate the use of energy in preparing for a low carbon future.
- A week long festival where the students of Kinsale schools invite other students from neighbouring towns for a forum. Where they will share their experiences of growing organic food, the low energy week, building a cob oven and enjoying a shared meal together.



## 2012

- Reassess all the practical changes so far. How have they worked? What can be improved? Are the schools examples of what they are teaching? Is the education a realistic preparation for life outside the school?
- Practical skills like woodwork, sustainable tree management, organic gardening, sailing, animal and people care etc. are now a weekly part of the curriculum
- Invite students to have hands-on experience of sustainable crafts and skills. The practical courses should enhance the school environment. E.g. the woodwork class builds roofs and school furniture and the metal work course could build casing for solar panels or wind turbines.

## 2015

- LETS (A local exchange trading system where no money is involved) can now be implemented in the town and also within the school, the students have now gained skills and knowledge they can trade.
- The Permaculture design course becomes a transition year module.
- Practical sustainability is now a full Leaving Cert subject.
- The schools are living examples of what they are teaching, almost totally self sufficient in energy and food.

## References

### Books

Stephen Sterling *Sustainable Education: Revisioning Learning and Change* - Schumacher Briefing 6 Green Books, UK

### Internet

Education for Sustainable Development (UK)

<http://www.envirocentre.co.uk/sustainability/education.asp>

The major sustainability initiative operating in schools at the moment in Ireland is the Green Schools Initiative, run by An Taisce.

<http://www.antaisce.org/projects/greenschools.html>

It also has a separate website; [http://www.eco-schools.org/countries/pages/page\\_ire.htm](http://www.eco-schools.org/countries/pages/page_ire.htm)

Learning Through Landscapes, a UK organisation is doing excellent work bringing imaginative landscaping into schools; <http://www.ltl.org.uk/>. They have produced an excellent downloadable leaflet called 'Growing Food in School Grounds', which can be downloaded from <http://www.ltl.org.uk/secondary/growing-success/documents/Growing%20food.pdf>

Growing Schools is an excellent UK based organisation promoting food growing in schools.

<http://www.novamedia.co.uk/growingschools/>

Eco-learning website <http://www.eco-learning.com>

Environment Education Link - an excellent resource in the US -

<http://nceet.snre.umich.edu/>

Gigglemoose - exploring and preserving nature with children, parents, and teachers.

Includes related merchandise for home and school.

<http://www.gigglemoose.com/>

Second Nature, education for sustainability

<http://www.secondnature.org/home.html>

South Central Iowa Solid Waste Agency has a brilliant section on making Christmas decorations from recycled stuff. very good

<http://www.sciswa.org/crafts.html>

..or even how to do your tree as well with recycled stuff...

<http://www.dep.state.pa.us/>

Use Less Stuff.com, has a complete Christmas checklist for a greener Christmas...

<http://www.use-less-stuff.com/ULSDAY/42ways.html>

## Housing

*Jan Brady, Anna Aherne and Abbie North*



### The Present

Housing capacity in Kinsale has grown rapidly over the last number of years but unfortunately without any sustainable planning practices. There are several developments dotted around the town and its environs mainly made up of apartments and housing estates. Further similar developments appear to be in the pipeline. It is fair to say that no sustainable building practices have been applied to the houses that have been built and that this also applies to future developments in Kinsale. This results in houses that are extremely dependent on fossil fuels for heating, which expose their inhabitants to unhealthy and sometimes toxic materials, which are very expensive and do little to encourage sustainable lifestyles or community development. Also, much of Kinsale's existing housing stock has very poor levels of energy efficiency, resulting in a far higher per capita energy consumption than can be sustained into the future.

### The Vision

Kinsale is a town where many people want to come and live, which puts Kinsale in the fortunate position of being able to set a standard or strong position in relation how it sees itself providing affordable sustainable houses/buildings. By 2021 all new buildings in Kinsale will include such things as a high level of energy efficiency together with a high portion of local sustainable materials used by local craftsmen/women. Houses will be of an appropriate size, and built to last. Kinsale will lead the way in providing attractive, progressive and pioneering developments, which other communities can also learn from and be inspired by.

New housing in Kinsale in 2021 will provide not just the fundamentals of shelter and heat but also the added benefit of building a community with a myriad of connections to local people. The existing housing stock has been retrofitted, made as efficient as possible

### Practical Steps

#### 2005

- Undertake a review of current building practices and future development plans for Kinsale.

#### 2006

- Organize an Open Space Event and invite anyone with any involvement in all aspects of housing in Kinsale to participate. Invite Consumers and Developers/Builders. Publish results.
- The Open Space Event would lead on to the production of the Action Plan to promote sustainable housing for Kinsale.
- This would involve local architects, local housing authority, and local builders etc. Consult widely with existing organizations.
- Action Plan needs to look at a wide range of things, such as:
  - energy conservation and efficiency strategies
  - renewable energy options
  - ecological building techniques
  - proven historical natural building techniques in Kinsale
  - affordable housing
  - the role of existing organisations
  - a set of recommendations for a Sustainable Housing Strategy for Kinsale.
- Town Council introduce a new policy insisting on mixed dwellings in developments, i.e. Retirement homes, large family houses/small units for single occupancy. This will give a 'social mix' of different socio economical groups.



- Arrange meetings with appropriate bodies to discuss the incorporation of this Action Plan into all future housing developments for Kinsale. Work together with Incel, a local business providing and installing cellulose insulation manufactured from waste newspaper, to explore and establish a local manufacturing plant.

## 2007

- Set up information and training events to help builders in learning to use sustainable materials and techniques.
- Run a series of workshops to teach people on how to retro fit all old buildings by insulating to a very high standard, together with review of heating methods, in association with the Cork Energy Agency
- Undertake, at Kinsale FEC, trials on different ways of insulating existing buildings using locally available materials. Techniques could include hemp/lime blocks, hemp/clay, straw/clay, woodchip/clay and others. These could be tested for their practicability, insulation properties, drying times and financial viability. A classroom at the college could be insulated to as a trial.
- Workshops are offered teaching people with conservatories how they can use them to produce some food for themselves and/or family. One family's conservatory hosts the course and is developed as a model.
- Show people ways of reducing water usage in existing buildings and homes. The Global Action Plan could be initiated to help in this respect. This is a 6-week programme, which covers various topics (energy, waste, transport, consumerism, community) and shows people how to take action in relation to these topics and is already running throughout the Cork area (see Resources below).
- Facilitate training to show people how to install and use geothermal/solar/passive solar.
- Housing Authority will employ a qualified person in sustainable building practices and for a paid fee will offer information and up to date advice on designs/queries, as well as manage a website of practical green design advice, resources, suppliers and inspiring examples of eco-build.
- Initiate and run a full-time fully recognized Sustainable Building Course at Kinsale Further Education College teaching a wide range of practical green building skills.
- Invite FAS to become involved in the training of apprentices in aspects of sustainable building.

## 2008

- Show how oil fired central heating can be easily replaced with wood pellet boilers or other renewable sources. Families could be given a financial breakdown, shown a working model and other information.
- Explore the feasibility of a local manufacturing facility, producing insulation materials, based on the research described above, as well as the feasibility of hemp production.
- Commission the Video Production Department to create a video/DVD showing Kinsale in 2005 and contrasting it with positive developments and examples elsewhere. Use this as educational tool in promoting awareness.
- Educate and continue to raise awareness relevant to retrofitting older buildings and also new builds to increase their sustainability
- Have a display/information stand of sustainable building projects in the Library and Town Hall. This could consist of a variety of projects from Ireland and the UK.
- Kinsale Town Council will publish its Sustainable Building Design Criteria, which will set out standards that all new buildings will be required to meet. These will include requirements that each new development whether a house or an estate will meet defined standards of energy efficiency and use a given percentage of local/recycled materials, as well as reaching high standards in sustainable design, with passive solar design being compulsory. A possible model for these criteria appears in Appendix 2.

They are launched with a 1 day seminar presented as a positive and visionary step for the town.

#### **2009**

- Make a model of an exemplary sustainable housing project for Kinsale and have it on display in the Library/Council. Transition Year students might be able to undertake this project as part of their studies.
- Begin hemp growing trials with local farmers – the first trials harvested are processed into the first batch of insulating products. The first homes in Kinsale are insulated with them.
- All building demolitions or refits are now bound to recycle at least 20% of materials (Denmark has a legal obligation that at least 60% of all demolition waste is recycled).
- Encourage pre-fabricated houses to reduce cost of building and provide affordable 'starter' homes for young people. Web sites are listed below.

#### **2010**

- Kinsale Town Council introduces new guidelines that housing estates should not be built until consideration is given to:
  - Transport – will residents be totally car dependent?
  - Schools – are they walkable, and do the local schools have the capacity for more students?
  - Community building/recreation facilities – is the development designed so as to facilitate a sense of community or to discourage it?
  - Community energy or heating production – what steps have been taken towards minimising the CO2 outputs of the development?
  - Suitable areas for food production are incorporated into the design – has the site been designed so as to maximise potential south facing growing spaces?
  - Single house development will be only given permission by meeting strict criteria – one off housing is discouraged, being now viewed as an unaffordable (in energy terms) luxury
- Increase building waste recycling rate from 20% to 30%.
- Expand the locally made insulation scheme – set targets for the next 10 years for increased amounts of crops grown as well as for the numbers of houses insulated.

#### **2011**

- Build an acceptable example of a sustainable housing project in Kinsale. This could provide a working model of how sustainable housing works. The houses planned for the Eco-tourism project could be incorporated into this plan (see Tourism).
- Write and publish a series of manuals for both the homeowner and builders for further reference on the project. Define areas such as energy options, retrofitting old buildings, designing new buildings. These will be available to the public for reference.
- Produce a series of half hour DVD's on aspects of sustainable buildings such as energy options, retrofitting old buildings, designing new buildings. These will be available to the public for reference.
- Increase building waste recycling rates to 30%.

#### **2012**

- Continue on-going research in the area of sustainable housing.
- UCC/CIT could be brought on board to help in this research.
- Continue to increase building waste recycling rate by another 10% each year together with the creation of new markets in recycled materials, and the setting of quotas for the amount of recycled materials that should be included in new buildings..

#### **Resources**

GAP Global Action Plan Coordinator for Cork Region – Mike Holden, Glanlough West, Bantry, West Cork. Tel. 02762855. Email: mikeholden@cef.ie



## Books

Steve Charter *The Somerset Sustainable Housing Study: The why, what and how of sustainable housing. A step-by-step guide.* Somerset Trust for Sustainable Development Barton, Davis and Guise. *Sustainable Settlements: A guide for Planners, designers and developers.* University of the West of England 1995

## Internet

Sustainable Ireland – [www.sustainable.ie](http://www.sustainable.ie)

Bioregional Development Group, the instigators of Bed Zed, a ground-breaking London based sustainable housing project [www.bioregional.com](http://www.bioregional.com)

Genesis Centre, Somerset. The UK's first dedicated centre for teaching sustainable building skills, in Taunton, Somerset. This is the web sit connected to the Somerset Sustainable Housing Study. [www.pcha.org.uk](http://www.pcha.org.uk)

Examples of low cost sustainable housing developed by Peter Cowman of the Living Architecture Centre, Co. Leitrim [www.livingarchitecturecentre.com](http://www.livingarchitecturecentre.com)

Examples of various prefab houses large and small scale. [www.fabprefab.com](http://www.fabprefab.com)

The Hollies-[www.theholliesonline.com](http://www.theholliesonline.com) shows examples of sustainable housing in West Cork.

Solearth, ecological architects, Dublin [www.solearth.com](http://www.solearth.com)

Architype, London [www.architype.co.uk](http://www.architype.co.uk)

Constructive Individuals [www.constructive.mcmail.com](http://www.constructive.mcmail.com)

Association for Environment Conscious Building (UK): [www.aecb.net](http://www.aecb.net)

The Ecological Building Network - lots of very useful material on ecological building [www.ecobuildnetwork.org/](http://www.ecobuildnetwork.org/)

Sustainability Works [www.sustainabilityworks.org.uk](http://www.sustainabilityworks.org.uk)

EcoDesign Checklists [www.cfsd.org.uk/nepd/etmuel/checklist.htm](http://www.cfsd.org.uk/nepd/etmuel/checklist.htm)

The Hollies Centre for Practical Sustainability [www.theholliesonline.com](http://www.theholliesonline.com)

The Alternative Building Company - a pioneering building company in the UK

[www.altbuilding.co.uk](http://www.altbuilding.co.uk)

Barbara Jones/Amazon Nails [www.strawbalefutures.org.uk/](http://www.strawbalefutures.org.uk/)

Straw Bale Building Association (for Wales, Ireland, Scotland and England)

[www.users.globalnet.co.uk/~straw/index.html](http://www.users.globalnet.co.uk/~straw/index.html)

Surfin' Strawbale – the mother of all strawbale sites – if it ain't on here, it ain't out there...

[www.mha-net.org/html/igor.htm](http://www.mha-net.org/html/igor.htm)

Cob Cottage Company [www.cobcottage.com](http://www.cobcottage.com)

Mayglass 2000 – a project renovating an old cob house in Co. Wexford

[www.mayglass-2000.ie/Innerlater/inproj.html](http://www.mayglass-2000.ie/Innerlater/inproj.html)

Build Something Beautiful, Kevin McCabe's cob building business, Devon UK.

[www.buildsomethingbeautiful.com](http://www.buildsomethingbeautiful.com)

All Things Cordwood [www.daycreek.com/dc/HTML/allthingscordwood.htm](http://www.daycreek.com/dc/HTML/allthingscordwood.htm)

Isochanvre -fascinating French hemp/lime building website (in English!)

[www.isochanvre.com](http://www.isochanvre.com)

Walter Segal Trust – low cost timber frame system often used in social housing projects

[www.segalselfbuild.co.uk](http://www.segalselfbuild.co.uk)

Earthships Biotecture – thoroughly comprehensive, an excellent site with great articles and information...[www.earthship.org](http://www.earthship.org)

The Traditional Lime Company (Co. Carlow) [www.traditionallime.com](http://www.traditionallime.com)

Natural Building Technologies (UK) [www.natural-building.co.uk](http://www.natural-building.co.uk)

Sheep Wool Insulation Ltd [www.sheepwoolinsulation.ie](http://www.sheepwoolinsulation.ie)

Building Resources – In San Francisco, a community owned building materials salvage centre. Can we have one here please? [www.buildingresources.org](http://www.buildingresources.org)

The Village - an Ecological Housing Project proposed for Co. Tipperary [www.thevillage.ie](http://www.thevillage.ie)

National Association of Building Co-operatives (NABCO) [www.nabco.ie](http://www.nabco.ie)

The Living Village Trust (UK) [www.livingvillage.com](http://www.livingvillage.com)

UK Cohousing Network [www.cohousing.co.uk](http://www.cohousing.co.uk)

Global Eco-Village Network (GEN) Europe [www.gaia.org](http://www.gaia.org)

Hockerton Housing Project [www.hockerton.demon.co.uk](http://www.hockerton.demon.co.uk)

SUN (Sustainable Urban Neighbourhood) Initiative [www.urbed.co.uk](http://www.urbed.co.uk)

# Economy and Livelihoods

*Michael O'Callaghan and Diane Carton*

*"It is better to light a candle than to curse the darkness."*



## The Present

The emergence of a transport-based global economy has undermined local and regional economies to the extent that local regions and localities are no longer wholly or even partially self-sufficient in energy, food supplies, building materials, clothing, crafts, etc. The economic ties that once underpinned communities are largely gone. Centralised funding structures have supplanted local economic autonomy.

### **The Background:** - The Debt-Money System.

All money comes into existence as interest-bearing debt, issued by private banks. <sup>(1)</sup> All loans must be repaid with interest, therefore all economies must continually grow, or face collapse. Economist Richard Douthwaite identifies this growth imperative as a social cancer, where the stress of background debt gives rise to relentless competition, obsolescence, waste, innovation, computerisation, acceleration, expansion, mergers and eventually monopolisation.

The positive aspects of this growth dynamic manifest as greater system efficiencies, accelerated technological innovation, competitive opportunity, wider markets, increasing economies of scale, apparent wealth creation, consumer choice, media impact and global markets. In short - the global industrial economy.

MATERIALLY however, the downside of growth manifests as jobs lost to increased efficiencies, poor-quality goods like clothes and food, an array of trivia and unwanted products, the cultural monotony of 'one-size-fits-all', the escalation of corporate power, invasive 24/7 advertising, and lower-paying jobs in a 'race to the bottom'.

In the core industrial, corporate and business sectors, humane and altruistic values are deemed unproductive and undesirable, while aggressive instincts are rewarded. These values then permeate throughout the wider economy.

SOCIALLY, this system impacts as career stress, loss of family time, loss of personal time, stress-related illnesses, depersonalised relationships, and the undermining of friendships, voluntary work, etc. As monetisation increases the social fabric suffers, children are reared in crèches, parents are placed in nursing homes, savings are eroded and retirement delayed. Regrettably these characteristics have become the accepted norm of modern life, as economic values overshadow all others.

The characteristics of the growth economy are so present and widespread they may even be difficult to perceive, particularly as we haven't experienced or imagined the alternatives. Besides, the human spirit is forever optimistic and incorrigible, taking each circumstance it finds and generally making the best of it: 'Hope springs eternal in the human breast.' Our good spirits may disguise the background realities.

Also, the pervasive "I'm-all-Right-Jack" syndrome receives official and media sanction. As long as we occupy a successful niche in the system then we are likely to support it, or at least not question it. Individualism - and isolation - is encouraged, while our collective instincts are slowly dismantled by the same market forces. Margaret Thatcher's notorious dictum "There is no such thing as



society - only individuals and their families" confirmed this reality of the market economy.

CONCEALED STRUCTURES. And so the structural components of our economic 'reality' remain concealed. Market values and institutions are tacitly accepted by academia, the religions and the media. Indeed, 'market values' now claim the moral high ground of the work ethic, whereby success in the system is deemed virtuous, while failure is a moral weakness. Meanwhile the debt-money mechanism quietly transfers wealth from the lower 80% to the 'top' 10% of the population, and thence to the top 2%, etc. <sup>(2)</sup>

ENVIRONMENTALLY the financial 'growth cancer' is seen in the destruction of habitats, soil erosion, loss of bio-diversity, species extinction, air pollution, global dimming and warming, toxic land and ground water contamination. Our full supermarkets conceal the environmental costs of carbon fuel-miles, worker exploitation, land depletion and toxic waste. Our species is relentlessly depleting limited resources and exploiting the fragile biosphere in blind pursuit of the profits required to feed the financial system's (or money market's) insatiable need for growth. "*Growth is the heart of the environmental problem. The National Environmental Plan will never succeed because it is embedded in growth.*"

R. Heuting, head of Dutch Environmental Statistics, The Hague, 1997.]

THE LOSERS. Those who cannot play a successful role in this economic competition quickly become marginalised, welfare-dependent, debt-laden, impoverished, even destitute. Their material insecurity and loss of social esteem serves as a silent threat to others to remain on the treadmill of (illusory) success, at whatever the cost. The material security offered by the globalised economy is largely illusory. Supermarkets hold an average of 5 days food-supply for the communities they serve. Companies owe no loyalty to place or population. Supply lines are stretched. The system is complex and vulnerable to geo-political tensions, industrial strikes, supply-line interruption and financial uncertainty and disruption. The system is top heavy: it fails to recycle its wealth and so maintain a healthy customer base. And it depends on cheap oil.

THE END OF CHEAP OIL. The low-cost distribution system which underpins the global economy was built on plentiful oil. A relentless rise in oil prices will force price-increases across the board. Competitive pressures will then increase and debt/repayment pressures will intensify. Uncertainty replaces confidence and the money supply contracts. Our vulnerability becomes starkly exposed. The consequences are potentially appalling. The need therefore to develop and strengthen stable local economies becomes clearer. However, this realisation may come too late for many exposed localities and regions such as ours.

### **The Future**

Even in an optimistic scenario where plentiful alternative fuel/technologies emerge, the growth imperative of the global money system itself is unlikely to change, particularly as the system is no longer in the control of any single government or democratic institution. <sup>(3)</sup> Oil or no oil therefore, the challenge now is to (i) envisage and (ii) plant the seeds of, a healthy local economy - one which will place the quality of life and community above mere considerations of profit.

*"If people living in an area cannot trade among themselves without using money issued by outsiders, their local economy will always be at the mercy of events elsewhere. The FIRST STEP is for any community aiming to become more self-reliant is therefore to establish its own currency system".* R. Douthwaite.

### **First, a Note on Multiple (Parallel) Currencies**

Progressive economists now agree that a multiple-currency approach will provide solutions to many of the problems above. To use an international currency for local transactions makes little sense, since the latter becomes exposed to the ills



and vagaries of the former. Edward deBono observes "*Multiple parallel systems, with permeable membranes between them, give very stable systems - as in the human body.*"

\* LOCAL CURRENCIES encourage and support local skills and initiative, strengthening the web of local contacts and inter-dependence. Energy is captured and circulates locally - it doesn't dissipate or escape. Existing models include Time-Banks, L.E.T.S., The Roma, Ithaca Hours and Hour currencies; Our proposal here will present the Links Network concept as a means of (a) integrating and (b) initiating the best aspects of these local currency models into a single functioning model for Kinsale.

\* REGIONAL CURRENCIES support regional and national autonomy and economic resilience. These have a wider geographical spread and acceptance than a local currency. Working models include Barter currencies like The Trade Pound, Trade Dollar, and the Swiss Wir. A 'BarterIreland' network was launched in April 2005. The (West Country) Celt and the South American Credito provide examples of regional 'mutual credit' currencies.

\* AN INTERNATIONAL CURRENCY should serve international trade, and not undermine local and regional economies, as is currently the case. Economist John Maynard Keynes in 1933 said: "*ideas, knowledge, hospitality, science, travel - these are the things which should of their nature be international. But let goods be homespun wherever it is reasonable and conveniently possible and, above all, let finance be primarily national.*"

## **The Vision**

Here in Kinsale we recognise that local information and exchange facilities are the key to re-establishing local resource management structures and community self-reliance. For us, the definition of a 'healthy economy' is one where debt-stress is removed from lives and livelihoods, and where everybody finds a useful and fulfilling role in a clean, sustainable environment. These are matters of first principle. By 2021 Kinsale could have a local currency, centred on community goals, and supporting a vibrant local economy of crafts and services. By simple means of currency fee and online transaction charges, Kinsale would have its own local revenue base, and be in a position to independently fund local community services and initiatives.

Under the guidelines set out below, local community organisations (CO's) will be able to 'fundraise' or resource themselves by soliciting offers of goods and services from their supporters and pooling these into a collective 'resource pool', thereby benefiting mutually from each other's untapped resources. A 'CORE Network' will administer these functions. Kinsale could be a leader in this regard.

Running parallel to this, a local TimeBank will co-ordinate volunteer activity, identify social needs and address local social problems, particularly for the youth, the elderly, the disabled and the underprivileged. In this Kinsale would be joining a growing world-wide TimeBank movement.

These initiatives will help Kinsale to become aware of its vulnerability and its strengths. When a local community is free to manage its local resources for the general good, its independence, resilience, health and sustainability are ensured.

## **Getting from Here to There**

*"Converting the vicious cycle of today's global economy that effects such a strong and divisive fracture within the human heart and mind into a virtuous and nourishing cycle will be no easy task. Community based action in an economics of solidarity is required [...] First, there needs to be a strong shared vision and community of interest within a defined population to engage with the task."*



## 2006

**STEP 1.** Compile and design an information website for Kinsale community. To attract both the mature browser and the youth, have it carry useful convenient links for the local and Cork area. The first six of these are essentially 'bait' to attract users. (Imagine professional design: neat pull-down menus). The 7th is the real purpose...

1. ENTERTAINMENT: cinema, theatre, sports, festivals, concerts, arts, gatherings; 'whazon' etc.

2. NEWS & MEDIA LINKS radio stations, main newspapers, webs, tv links; Weather Reports.

3. TRAVEL LINKS: to the airlines, rail timetables, bus services and ferries, holidays; Links to LOCAL TOURIST attractions;

4. MOTOR LINKS to AA, Car Insurance; Motor Tax online; Routes, Weather;

5. Links to LOCAL & GOVT. SERVICES - County Council: library, grants, planning, etc); waste recycling; roads dept;

6. GENERAL LINKS: i.e. COMPLAINTS (where to complain), HELPLINES (support groups etc); HOBBIES - like gardening; PREGNANCY and other useful links designed to generate hits;

7. LOCAL COMMUNITY LINKS to local sports, schools, community groups, charities, churches, clubs and voluntary groups. Where a group has no web address of its own, provide a page or paragraph where their Profile may appear. This section to gradually receive priority and 'pride of place'.

Suggestion: Call the site Kinsale Links ("Local Information Network for Kinsale & Surrounds") or similar.

**STEP 2.** Include a highlighted 'RECYCLE' or 'FREEBIES' Noticeboard, where anything not wanted can be listed free of charge. (Listing are automatically removed after a selected time.)

**STEP 3.** Once the local community organisations (CO's) are included, involve them further by designing an online EVENTS NOTICEBOARD, plus a neat printable A4 version for the benefit of off-line people. The COs will manage their own listings (via security pin number) or may assign an online friend or young person (see below) to update their listings, and to look out for needed 'freebies'.

At this stage, Kinsale will have its own online, non-commercial, community-centred - Events Guide, Links, CO's listings and online Recycle Centre.

## 2007

**STEP 4.** Include a local online NEED LISTINGS or 'WANTED' facility, whereby the CO's and schools may publicise their needs (plus their 'wish list'). This will require some training as 'needs' can include voluntary time for example, lifts for members, special skills, specific material contributions, specialist professional information or advice, non-professional assistance, etc. 'Wish Lists' require a group to have dreams and aspirations - an important ingredient for success!

### STEP 5

#### VOLUNTARY TIME CONTRIBUTIONS

Include a database facility on the web whereby voluntary time contributions are

(i) recorded by the recipient organisation and

(ii) acknowledged (a) privately or (b) publicly (optional) on the website and/or in the newsletter. This structure is the beginnings of a local TimeBank, which may develop more formal structures as it generates activity.

**STEP 6** (c) Develop the website so the newsletter can be a weekly or fortnightly email ('Yahoo-group') newsletter or ezine.

**STEP 7.** Engage the local teachers/schools /pupils to help :

(a) create publicity (b) disseminate information (c) elicit creative opinions and responses (d) to locate young web/online aficionados to help with the web design and maintenance aspects of the site and (e) attract online users to become 'Key Links' who offer to print out the newsletter fortnightly and give it to offline relatives, family, friends, neighbours and colleagues.

**STEP 8.**

(a) Develop an online Discussion Forum email group to help develop and evolve the site, to attract active 'steering group' participants, to explore new ways forward, to formulate poll questions and questionnaires. Aim to synthesise the discussion into a paragraph or two monthly for submission to the Ezine/Newsletter.

(b) Develop a 'Your Opinion' section. Develop its style with a long-term view to taking spot polls on issues of local importance, encouraging positive (and negative) feedback, new ideas, etc.

At this stage the community newsletter or 'Noticeboard' will contain (at various degrees of development):

- useful links (listed above)
- profiles of local CO's (Community Organisations)
- listings of CO's wants /needs (highlighted)
- a record of contributors
- up-to-date information on local events
- goods available for recycling
- the beginnings of a local TimeBank
- a local Opinion Poll format
- a Discussion Forum group
- any other material the steering group deem appropriate to include.

Many online users will now be printing off copies for offline contacts, and receiving acknowledgement for their effort as the Key Links in the community. (Suggestion: Annual Gold Link Awards ?).

**2008**

**STEP 9.**

Publicise the website further using local press, small notices and cards, stickers etc., (where sponsored).

**STEP 10.**

Prepare to register as a charity. Name it 'CORE Network' or similar, in order to run the growing service, with a steering group drawn from the local CO's and young people from the schools who show interest and energy. The Core Network forms the beginning of a national co-ordinating body for other localities wishing to follow Kinsale's example. The CORE Network is in a position to help and reciprocate by providing web updates, collective experience, support, publicity, PR, events, etc. [CORE Network = Community Organisations Resource Exchange Network].

Broadly speaking, CORE is about core community values; core environmental values; and core ethics in the area of money and exchange. CORE aims to develop new opportunities for communication and exchange at neighbourhood and community level, and to release positive personal and collective energies that may currently be dormant. CORE aims to facilitate the coming together of community organisations (and their supporters) to inter-link and prosper by sharing collective assets.

**STEP 11.**

Encourages local CO's to



- (i) list their unused and potential resources online
- (ii) 'contribute' or include these resources in an online collective Resource Pool which may be accessed or 'harvested' equitably by the participant community groups, via an online currency called 'Credits' or 'Community Credits' (CC's).

'Unused and potential resources' include time or material resources (goods or services), or anything someone may contribute (other than money). N.B. Such contributions need not relate directly to the group's needs; the group benefits from the credits that such offers generate, and the group may use such credits to :-

- (i) Purchase other goods and services from the resource pool;
- (ii) reward assistance the group has received;
- (iii) assist in part-paying for services for which the group is under-funded;
- (iv) supplement existing funds and purchases, taking some pressure off money resources (to preserve these for more essential purchases).

Conventional money is absent from the equation and real resources are released. Skills, hobbies and natural abilities, which may or may not be recognised or utilised in the conventional economy, become relevant and useful on this community exchange network.

Unused resources may be solicited or forthcoming :

- \* from the group itself - the services it offers as a group;
- \* from the group's friends, families and supporters;
- \* from the group own membership and associate members;
- \* from the groups beneficiaries or 'clients', thereby facilitating the 'co-production' or reciprocal principle.

All offers or contributions are presented in Voucher format. Each carries a stated value, e.g. [1 X Drain Cleaning to Max E75, within 10-mile radius; Sports Club supporter.]. or e.g. [Experienced Babysitter X 3 evenings, Thursdays & Sundays excluded, Value E66, valid to June 15; in support of Elder Care Assoc.]. Once uploaded to collective online 'Resource Pool', these Vouchers are automatically numbered and their value in community credits is added to the CO's online account.

Vouchers may be -

- (i) used directly by a CO in pursuit of its aims;
- (ii) offered for sale for cash (or at a discount) to the general public, as a cash fundraiser;
- (iii) contributed to the collective Resource Pool, and the credit equivalent spent on other (more needed) Vouchers from the pool.

The Resource Pool automatically releases the Voucher on receipt of the appropriate payment in cc's. Their function completed, the cc's are automatically cancelled.

## **STEP 12**

Develop a structure whereby contributors of Vouchers to the Resource Pool are

- (i) mentioned in an online 'Thank You' column;
- (ii) listed in a 'Thank You' Column in the Newsletter (optional)
- (iii) entered into a Donors Prize Draw
- (iv) any other means of acknowledging a donor's generosity

## **2009**

### **Kinsale Time Bank**

**STEP 13.** The level of voluntary activity (in response to CO's listing their voluntary requirements) has reached a level where some more formalised structures and safeguards are deemed appropriate. A Kinsale Time-Bank group forms to promote and administer these activities. They liaise with Time-Banks in the US & UK, sometimes exchanging young administrators and liaison officers

with TimeBanks in Hawaii, Colorado, Boston, London and Cape Town. They send delegates to the World TimeBank Conference in California who return motivated and inspired with fresh energy. New structures whereby helpers are screened and interviewed are put in place, allowing for an expansion of services.

In Kinsale, the isolated elderly in the outlying areas are identified and assisted with lifts, visits, shopping trips, house-care and special events. The TimeBank organises voluntary help for youth programmes literacy classes, environment programmes, and leads the way in organising student skill exchanges. Kinsale addresses its own problems using its TimeBank facility.

#### **A NOTE ON TIMEBANK PRINCIPLES:**

TimeBank principles are well established. Several Hundred local TimeBanks are in operation across the US and in the UK. The main principles are:

(a) that all voluntary work is measured as equal in value, i.e. one voluntary hour = one time credit, regardless of the skills one offers;

(b) Everyone is seen as special with a contribution to make;

(c) The donor's time contribution is formally recognised and acknowledged; individual Timebank 'statements' are issued periodically.

(d) The donor may later ask for help - if the need arises - and receive priority attention. Credits may thus be 'spent'. In this way the TimeBank serves as a form of social insurance

(e) Credits may be 'donated' or transferred to another account, e.g. to an elderly family member, to a central Credit Pool, or even to a TimeBank in another locality.

(f) Time Credits thus stored are not subject to charges or interest, but remain constant.

#### **2010 - Individual Accounts Online**

##### **STEP 14.**

##### **INDIVIDUAL ACCOUNTS ONLINE**

**14 (a)** Divide the Resource Pool into two listing: (i) PRIORITY LISTING - the listing new offers; (ii) GENERAL LISTING - of Vouchers still on offer after 1 week. (i.e. not booked by the CO's)

**14 (b)** At the same time facilitate members of the public to offer their skills and resources online. i.e. to add their offers to the Resource Pool, to open an online account and to earn cc's. CC's may principally be earned by supplying a CO's need or wish-list item. Such earnings allow access to the Resource Pool (General Listings). All offers carry a guideline price, with information on availability, delivery, etc. Having previously contributed services or goods to the Resource Pool, some people may like to continue offering their services for cc's. These are likely to be the initial individual account holders.

**14 (c)** To encourage spending and discourage hoarding, unspent savings are subject to a small 'parking fee' or negative interest of say 0.5% to 1% per month. Online transactions are similarly subject to a community charge (say 5% to 10%). All charges and fees are automatically credited either to either

(a) the CORE Community Fund or

(b) the CO of the account-holder choosing, or

(c) both. [policy decision].

A higher contribution % is optional, i.e. any amount from 15% to 100% of a transaction. e.g. You sell a ladder online and transfer 50% of the earnings to the Girl Guides account.

**14 (d)** Sufficient currency must now be made generally available to facilitate the purchase of these new items on offer (14b above). This allows for the creative issue of new currency into circulation. CORE principles state that such currency be issued in core areas (care of the elderly, the young, the disabled), and at a universal rate of pay (i.e. not consultant's fees!) which serves as a stable guideline rate throughout the local economy. The Time Bank qualifies as a



principal recipient, thereby enabling it to resource its activities materially (as well as with voluntary hours). CORE provides a list of priority activities to assist in spending decisions. (i.e. the homeless or hungry take precedence over sports and the arts, who are capable of their own fundraising). The Resource Pool is thereby enlarged for the benefit of the community. The transaction charge helps build up a community fund.

### **A story from 2010 YOUNG BANDS ON THE WAY UP ...**

Several groups of local young musicians organise to form a Co-op. Once established, they apply to register with Kinsale Links as a recognised CO (Community Organisation). Once approved by the steering group, their aims and needs are profiled on the web. They need rehearsal space and equipment, but are very short of cash. They open an online account for local community credits (cc's).

They 'fund-raise' a list of offers from their families, friends, contacts, and from their own resources. Their initial Offers List includes items like an inlaid coffee table (value €60), a chiropody session (€35), truck transport (€100), a book token (€30), solicitors advice (€150), 2 X garden-pond cleaning (€35), 3 nights babysitting (€60), a website design (€200), 1 days house painting (€80), tall bedside lamp (€18), 3 grass cuttings (€45), etc. At this point their Offers are worth approx. €780. Each offer has been written on a slip, signed and dated.

The Co-op add their offers (with Euro values) to the Kinsale Links site. Their online account is automatically credited with 780 cc's (Community Credits). Their offers appear automatically as 'latest offers' in the Community Resource Pool and in the Ezine /printed Newsletter.

The Co-op acquire some useful items in the Resource Pool - including some late-night taxi vouchers, a kettle and fan heater, some high stools and extension leads. But so far a rehearsal space eludes them. Some of the items they offered online raise discount cash (Step 9 above). Then the old church hall committee decides to repair the roof. They need cc's to achieve this. They offer rehearsal space to the Co-op at 30cc per afternoon or evening session, plus cash for the electricity usage, with strict conditions,. The Co-op agrees. Six months later the bands play a blinder of a public concert for the Harvest Festival, and earn 600cc for their services. A local man Pete, an old hippie drummer, parts with his spare drum-kit and Zuider cymbals for 500cc. (He's spends them on sauna vouchers for sessions up at Mitchell's converted garage, indirectly helping the school's new landscaping programme). The bands are busy. Their New Year's charity gig is already booked out. Everyone is still 'broke', but everyone's happy.

### **2011 - Printed Currency In Circulation**

#### **STEP 15**

In order to access a wider resource base and to encourage a wider acceptance of cc's, Core now issues cc's as a paper-based currency. These are issued in 3 ways:

- (a) Account holders may withdraw cc's as cash (for a small fee).
- (b) CC's are spent into wider into circulation by directly funding community initiatives and worthwhile community projects (see 14d above).
- (c) Making interest-free loans available to CC's and individuals for appropriate purposes. In this way worthwhile 'non-core' activities may be further supported. Transaction charges apply. Breaches of contract are made public. Good name is the 'collateral'.

The currency notes carry information promoting the website. All notes carry a 'valid-until date' based on a 10-15% per annum currency fee, so that a small portion of circulating notes go out of service each month. (see below)

Even while circulating beyond the apparent reach of the online accounts and listings, these notes nonetheless contribute further support to the core community groups activities by :

- (i) opening up a huge 'resource pool' i.e. the general Kinsale community;
  - (ii) promoting the website, thereby further encouraging its direct use;
  - (iii) prompting further contributions to the local CO's and voluntary resource pool...
  - (iv) by eventually passing their 'use by date', the currency notes are continually either
- (a) allowing room for further creative issues (or 'funding') from the CORE Community Account.
  - (b) where it is deemed there is a surplus of currency, the fee mechanism (valid-until date) automatically removes currency from circulation.
  - (v) because a proportion of currency notes are lost or taken away as souvenirs, further community spending may thereby be facilitated.

**STEP 16.** Make special short-term, medium-term and long-term saving accounts available online, wherein attractive 'parking' rates are as low as, say, 2% on 5 year accounts are available.

**STEP 17.** Indicators of the level of demand for currency in the wider community will include a Combination of Indicators, including

- The level of cc's going into special saving accounts;
- The demand for loans;
- Contribution levels to CO's accounts;
- Prices reached at online auctions;
- Direct feedback 'from the street';
- Other indicators to be explored and discovered.

At this stage the essential features of a community currency are initiated. This currency supports both individual 'trade and exchange' and beneficial community activities. It is envisaged as an altruistic currency at all times, but nonetheless supports and encourages local individual skills and greater economic independence.

The envisaged currency

- is asset backed;
- is monitored with inbuilt controls, guidelines and parameters;
- is designed to interlink easily with official currency, but is issued on different principles and ethics, with different aims and a different ambience;
- it makes it easy to support the local community;
- It strengthens existing community links, and helps create new links.

**2012.** Kinsale launches a new Natural Kinsale programme, offering healing holidays' in natural surroundings with locally grown wholefoods, orchard walks, wildlife ventures, ecology trips, natural medicines, etc.

**2013.** The Hospital is threatened with closure due to severe Government cutbacks. Together with the CORE Network and the Kinsale TimeBank, the Local Council raises the resources to keep the hospital open. The ill and disabled provide the opportunity to issue fresh local currency into circulation. In the early years stress and heart related problems, together with obesity, chronic fatigue and various medicinal addictions are high on the agenda. These are collectively classed as suffering from '*Celtic Tiger Syndrome*'. Otherwise, comforting those who are wracked with regrets for their wasted and broken lives in the industrial economy is the chief concern...

**2014.** The plentiful local currency makes possible Kinsale's efforts to revitalising old crafts and skills, including boatbuilding, sea-fishing, ironmongery, basketry, tool making, wood working, and traditional farming skills.



**2015.** As a tourist centre, some 30,000cc of special issue notes are taken away as souvenirs annually, allowing CORE to issue this amount again through the community budget.

**2016.** Despite the collapse in pension funds internationally, credits at the Kinsale TimeBank, which keeps records of all voluntary community activity, ensures that those who have contributed actively over the years are looked after in their old age, as the need arises. Most pensioners turn out to be net ongoing contributors to the TimeBank, however, just to confound the age-ist critics and the doom sayers.

**2017.** Kinsale has become renowned as a centre of learning and education, which generates further national and international currency. Unlike any time in the previous 500 years, the sense of community, participation and 'joi-de-vivre' here has transformed working in Kinsale into an experience of motivated, fulfilled living.

**2018.** Having pioneered a new local currency network, Kinsale hosts the first International CORE Network conference, with representatives sailing in from all over the world... !

**2019.** There is no shortage of fulfilling work. Even the youngest in the community can earn credits in the local TimeBank, or learn crafts or sports or music on the local Skill Exchange Network. The youth find apprentice-work in crafts, and technology, in organic growing, fisheries, at the bioenergy plants, in local construction, communications or natural medicine, among others. Kinsale's reputation for craft boat building is fast becoming established. With our warmer climate, flower production is flourishing, supplying the Cork region with fresh flowers daily.

In the early years, the apprentices earn mostly local currency. By the time they qualify they are earning a higher proportion of national currency. Some will go on to become high earners of international currency, either directly or via salary negotiation, depending on their talents.

**2020.**

Economist Richard Douthwaite describes the 'Features of a sustainable territory' as follows;

*"It provides the basic necessities of life for its population from renewable resources under its control and expects to be able to do so without over-using or degrading those resources for at least the next thousand years. [...] It has no debts to lenders outside and there are no net flows of capital across its borders, thus allowing its interest rate to fall close to zero as it moves to maturity. It does not depend on continual economic growth to stave off collapse."*

Richard Douthwaite - The Growth Illusion p.335

Here in Kinsale we are largely immune to the vagaries of the world's stock market. Our regional and local currencies have protected us from interest rate hikes, from stock market falls and from the currency speculators. Most people are now debt-free, and debt-stress is a thing of the past. The difference is tangible. We are already 70% self-sustaining in food and fuel, and 50% in building material supplies. Kinsale fisheries, harbour facilities, together with a range of locally produced goods, crafts and services generate sufficient national currency to meet our trade purchasing requirements (e.g. glass, paper, and steel from the re-established Irish mills). The Kinsale hospitality industry in particular now generates sufficient international currency to provide for our import requirements (e.g. energy technology, fabrics, transport and communication technology, etc.)

**2021.** The pace of life is easy. The stress is gone. Since 2012, Kinsale's increasing reputation as a centre for fresh local cuisine, natural herbs and healing, local brews, and relaxed 'de-tox' holidays in a clean, natural



environment has attracted visitors from as far afield as Derry and Donegal seeking respite from the ravages of the industrial economy. Travellers and sailors from further afield visit regularly, few want to leave. Many have elected to settle here. Can you blame them?

### Conclusion

*"If money is liberated, commerce will be liberated; if commerce is liberated, the people will be empowered to the full extent of their abilities to serve one another; the liberation of capital and land and the popular control of politics will follow as a matter of course".*

'Money' by Thomas H. Greco, Jr, p13.

### FOOTNOTES:

1. It is not widely understood that all money [excluding the 3% cash and coin in circulation] is created as DEBT, i.e. as interest-bearing loans. If no individual or institution ever borrowed again, money would gradually disappear as the old loans were all repaid. Furthermore, banks do not merely lend out money, banks actually create money, based on collateral, and charge interest on it. [See Palmers Leaving Cert. Economics Textbook p234]. All money is lent/borrowed into existence.
2. Interest & Inflation Free Money, by Margarit Kennedy, p.26 ff. Of the 10% of people living from interest on money creation, the last 1% of these earn 15 times more again, while the final 0.01% earn 2,000 times more.
3. Indeed even governments depend for their public borrowing on the private commercial banks, like the US 'Federal Reserve'. Central Banks at best can regulate or 'tweak' the financial system, but they cannot change the debt-money system itself.
4. The traditional Meitheal of the Irish rural countryside, whereby neighbouring work-teams exchanged work days at planting and at harvest time, building walls, etc. operated on a Time exchange basis, using the communal memory as its exchange facility. A Time Bank replaces the communal memory with a computer record.

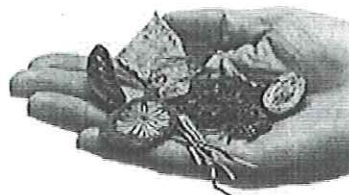
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- Robertson, James, *The New Economics of Sustainability*
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- Rowbotham, Michael, *The Grip of Death - modern money, debt slavery and destructive economics*
- Rowbotham, Michael, *Goodbye America - Globalisation, debt and the dollar empire*.
- Schumacher, E. F. *Good Work and Small is Beautiful*
- Seyfing, Gill & Smith, Karen *The Time of our Lives - Using Time Banking for Neighbourhood Renewal*
- Solomon, Robert, *Transforming the World Economy*
- Zarlenga, Stephen, *A Brief History of Interest* American Monetary Institute



## Health

*Compiled by: Michelle Wash,  
Ben Girling, Carmel Geary, Rob Hopkins*



### Present Situation:

In Kinsale there is the Kinsale Cottage Hospital, which deals mainly with elderly patients. There is also the holistic centre where private reiki and massage practitioners work. There are also local doctors, dentists and social work facilities. At present there is a heavy reliance on oil based pharmaceuticals which are often imported long distances. There are no A&E facilities in Kinsale leaving patients reliant on ambulance services to the city. The prevailing belief system is in favour of conventional mainstream medicine, while the general population's growing interest in alternative and complementary medicine is yet to be reflected in mainstream medicine. Buildings used for medical and health services are heavily reliant at present on fossil fuels for heating, lighting and medical equipment. Much knowledge concerning indigenous medicinal plant cultivation and use has been lost with the passing of the older generations.

### The Vision

By 2021 a shift towards individuals understanding their own ailments and taking natural steps to heal themselves will be well underway. Medicine will have fully recognised the principal that health is about much more than simply the absence of disease. It has been established that the establishment and maintenance of good health should take priority over the treating of disease.

The lack of oil reliant pharmaceutical drugs is increasingly offset by a flourishing array of locally grown medicinal plants and herbs. Education about the benefits of healthy, locally grown foods and healthy lifestyle are of prime importance. Both alternative and complementary medicine are available to all and supports the role of conventional medicine. Without the availability of cheap fossil fuels, health establishments have switched to green alternatives such as wind and solar, with bio-digesters turning green waste into compost for hospital gardens. A healthy environment with meaningful work and good community support has been achieved through community action and co-operation.

### Practical Steps

#### 2006

- Organise and hold a Health Forum in Kinsale to stimulate ideas and bring together different groups from all sectors of healthcare to identify issues and possible solutions for further action. Invite hospital and local health care workers.
- Establish the Kinsale Natural Health Partnership as a follow-up to the above, which would be an ongoing vehicle for issuing ideas and strategies, seeking funding for research projects, and meeting regularly to discuss new ideas and directions
- Write modules for and then launch a course at KFEC in Herbal Medicine, which could run either in conjunction with or separately from the permaculture course already established. This would aim to introduce herbal medicine skills to a new generation and in a new context.

#### 2007

- Build outreaches into the community and liaise with other groups such as Cork Community Art Link, the Cork Mandala Gardens Project, art therapy groups and local therapists and doctors.
- Raise awareness of healthy organic food by having a Slow Food festival involving local restaurants.
- Talk to local schools about methods of raising awareness in the children about diet and health issues.

#### 2008



- Introduce a Walk to School Programme for local schools, to encourage children to walk or cycle to school. Walking clubs could be formed to get children from different parts of town to walk in together, so as to allay parents' safety fears.
- Identify a site, preferably within Kinsale, and begin and establish a medicinal herb garden, talk to Kinsale Town Council and hospital as possible donors.
- Continued development of Kinsale Natural Health Partnership.
- Approach Kinsale Hospital management with a view to commissioning a thorough Energy Audit for their buildings, followed by a renewables plan, designed with the long term aim of making the hospital a Zero Carbon building.
- Begin to work with an existing doctors practice in Kinsale to develop it into an Integrated Community Health Centre. This would aim to shift the focus from treating disease to promoting health. As well as running a conventional clinic, the practice would begin with each patient by building up a complete lifestyle picture, looking at the individual's life history, medical history, exposure to toxins, family history and so on. This would be complemented by a physical examination, with facilities for basic blood testing and so on available on site. Building up this complete picture would allow the practitioner to design a healthy living programme for each person. The centre would also have a nutritionalist, who would advise on diet and lifestyle issues. The clinic would also grow to include a herbal apothecary, making herbs and medicines using local plants, and working with the newly established medicinal gardens. The Centre would make space available for yoga classes and a range of other complementary therapies. It would also offer support for homebirthing mothers in Kinsale.

#### **2009**

- Lobby politicians and councillors to start up Primary Care Trust programme in Kinsale. These are run by local GPs, nurses, health and social care workers as well as representatives of patients and the community who become responsible for securing health and social care and tackling health inequalities locally. This is proving very successful in the UK where it started recently.

#### **2010**

- Medicinal herb farm becomes established giving local employment and source of income through sale of plants and tinctures/remedies. Planning applied for to construct a naturally built herbal clinic on the same site.
- Hold a meeting on the idea of setting up a health panel of local people to help make decisions about funding and other issues. This community participation will be supported by using a Time Bank. For every hour spent giving support to others or participating in some way, they earn credits through the time bank. This empowers people and builds a stronger local community network.

#### **2011**

- Local schools switch to using locally produced organic food in the school meals. This is backed up by the introduction of a Food Procurement Policy by Cork County Council and is facilitated by a newly established Local Food Partnership, consisting of local growers, teachers, nutritionalists and other suppliers, designed to iron out problems regarding the creation of a reliable local food supply.
- The Integrated Community Health Centre has now become a model for community health care widely respected throughout Ireland and beyond. It has proved a groundbreaking pioneer, and it is now felt that it has outgrown its current venue, and requires its own dedicated building. Plans are drawn up, funding is sought and a site within the town is identified.



## 2012

- Work begins on construction of new cob Health Centre. The Centre is designed as a synthesis between conventional and alternative healthcare approaches, and also a showcase of healing architecture. Built using local and natural materials, the building is free of any toxic materials and integrates the building and its garden of medicinal plants in a delightful calming and healing way. It is designed to serve many functions, mostly to do with promoting health in the community. It also serves as a natural birthing centre for local women.

## 2013-2021

- The Health Centre continues to go from strength to strength. The need for prescribed medication begins to reduce, and the proportion of common ailments treated using locally produced medicines continues to increase.
- The increasing amount of available locally produced food begins to make itself apparent in the reduced levels of childhood obesity, asthma and other common ailments.
- Ongoing research discovers more uses for locally produced plant materials, adding to an evolving and growing body of knowledge on local medicines.

## Resources

### Articles

Katherine Willow ND and Michael Willow *Blueprint for Action – Developing Integrated Community Health Centres* Permaculture Activist magazine No. 45, March 2001

### Internet

The Herbalist – loads of information on all different herbs and their uses, really well set out... [www.info-galaxy.com/Herbs/](http://www.info-galaxy.com/Herbs/)

Growing Herbs in the Home Garden – from the Centre for Agriculture, Natural Resources and Community Development, West Virginia University

[www.wvu.edu/~agexten/hortcult/herbs/ne208hrb.htm](http://www.wvu.edu/~agexten/hortcult/herbs/ne208hrb.htm)

Hygeia Foundation Inc [www.hygeia.org](http://www.hygeia.org)

Herbal Medicine and Spirit Healing the Wise Woman Way [www.susunweed.com](http://www.susunweed.com)

Botanical.com [www.botanical.com](http://www.botanical.com)

Herbal Gardens [www.herbalgardens.com](http://www.herbalgardens.com)

Medicinal Herbs Online [www.egregore.com](http://www.egregore.com)

Online Herbal Encyclopedia [www.naturalark.com](http://www.naturalark.com)

HerbMed [www.herbmed.org](http://www.herbmed.org)

The Urban Herb Website [www.clik.to/urbanherb](http://www.clik.to/urbanherb)

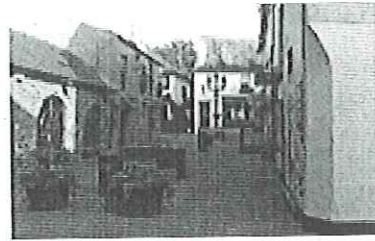
Henriette's Herbal Homepage [www.ibiblio.org/herbmed/index.html](http://www.ibiblio.org/herbmed/index.html)

Alternative Nature Online Herbal [www.altnature.com/index.html](http://www.altnature.com/index.html)

Homoeopathy World – excellent site, has a free homoeopathy course...  
[www.homoeopathyworld.com](http://www.homoeopathyworld.com)

# Tourism

*By Becci Neal*



## The Present

Kinsale's economy is at present largely reliant on tourism. It is well known for being the "Gourmet Capital of Ireland", and the town's turbulent local history as well as its natural and architectural beauty attracts great numbers of visitors every year. But tourism is a trade born in times of rich resources, and given that a large proportion of visitors come from overseas, what would happen if the availability and price of oil prevented people from travelling so easily? Flying abroad for holidays will become more of a luxury the further we slide the slippery slope of oil descent and certainly won't be regarded a worthwhile investment of the earth's dwindling supplies. It is highly likely that international tourism as we know it will become a thing of the past and most visitors to the town will be local traders and business people rather than sightseers. It is therefore very important that we envisage a future economy that is no longer reliant on the existing tourism trade.

## The Vision

With forward thinking and good planning Kinsale could indeed make a 'prosperous way down' with regards to tourism. The key to this is transforming what is at present an unsustainable and vulnerable trade into something solid that will still be viable in a post-carbon era.

Kinsale has many attributes that give it great potential for becoming a 'sustainable town', and as such could become a leading example of a community's dedication to surviving oil decline. The national and international attention this would receive would provide a safe and secure transitional period for Kinsale to wean off unsustainable tourism, and in the long term put into place sustainable systems of living for future residents. "Ecotourism" is typically defined as travel to a destination that conserves the natural environment whilst improving the well being and enhancing the integrity of the local people. It is growing at a rate of around 30% per annum, which is significantly higher than the rate of growth of 4% for tourism as a whole, and studies have shown that tourists are more willing to pay extra for ecotourism packages than standard tourism packages. Through implementing the ideas set out in this report, Kinsale would become an Irish town at the forefront of active sustainable design; a unique and innovative leader setting the precedent for other towns and communities to follow, while at the same time using tourism as a vehicle for building the infrastructure and economy that will sustain it beyond tourism.

## Practical Steps

### 2006

- Kinsale Sustainable Development Centre is set up (see Appendix 1) and acquires funding to employ people. Among the first key people to be employed is an Ecotourism Officer, whose role is to promote, educate and offer a consultancy service in all aspects of sustainable tourism. Their primary task would be to organise, in association with Cork/Kerry Tourism, a Public Think Tank event where all members of the tourism trade in Kinsale are invited to participate in open discussion about the potential of ecotourism in a low energy future. Market research is carried out to find out present tourists opinions on matters of travel, tourism, the environment and Kinsale.
- Set up an Association to help, support and unite local businesses, institutions and residents who wish to actively work towards the basic principles of ecotourism, as set out by TIES (The International Ecotourism Society):
  - Minimise impact



- Build environmental awareness and respect
- Provide positive experiences for both visitors and hosts
- Provide direct financial benefits for conservation
- Provide financial benefits and empowerment for local people
- Raise sensitivity to host countries political, environmental and social climate
- Support international human rights and labour agreements
- Formalising a body as a recognised Association for the purpose of promoting the initiative of the local community means that the Council can then promote you and apply for funding on your behalf. Therefore an Action Plan must be drawn up and information and research gathered to prepare a proposal that will be presented to the Council. Part of this should include a report that identifies which fundamental trades and skills are absent from Kinsale, stressing the need to diversify the local economy.

## 2007

- Association begins a training programme for those wanting to convert their business to meet the ecotourism criteria. This programme should be ongoing for as long as interest is shown. Funding for this could be acquired from established government organisations, such as West Cork LEADER.
- Begin 'Slow Food' promotion, targeting restaurants and cafes. In the same way that Clonakilty is Ireland's first Fair Trade town, Kinsale could become Ireland's first Slow Food town, combining the existing gourmet 'brand' with more local sustainable food practices.
- Make Kinsale Further Education College more visitor friendly and more of a focal point for the local community, by holding Farmers Markets there and having regular days when it is open to the public. The Practical Sustainability course which is currently being run there is a valuable source of innovative thinkers, and is the only course of its kind being run in Europe.

## 2008

- Businesses start applying for 'green accreditations', for example the EU Flower, which is awarded to tourism accommodation providers who respect the surrounding environment. The World Tourism Organization (WTO) commissioned ECOTRANS to carry out a worldwide inventory and comparative analysis on 104 eco-labels, awards and self-commitments called VIST - Voluntary Initiatives for Sustainable Tourism. These can all be found on their web site (see Resources below).
- Find a suitable location for student accommodation to be built using green low-impact methods, such as cob. Sites could either be on private land or sites made available by Cork County Council. During the summer months these buildings could be used as unique and exceptional tourist accommodation. Students from the FEC are competent to build such designs, and backing from Town and County Councils would help considerably in their realisation.
- Start a community campaign to reach out and gain support of residents for Kinsale to become Europe's most sustainable town. Apply for Community Funds, which levy households to raise money for projects.

## 2009

- Create a beautiful yet practical garden/edible landscape in the centre of town. This community garden would grow and supply food for local accommodation providers, so guests could see where their meals were coming from and learn about sustainable food production.

## 2010

- By this date no more tourist attractions or buildings that are not conducive to Kinsale's goals of sustainability should be allowed to be set up within the town. The Council will ensure this. A way of consolidating this aim would be to make Kinsale part of the Slow Cities movement. This

is an offshoot of the Slow Food movement, and now has more than 80,000 members in its organisation, across 100 countries. Called 'Cittaslow' in Italy, the country of its birth, it is a movement in which people choose to deliberately preserve and cultivate the values they consider threatened by the insistence on doing everything ever more quickly. The market town of Aylsham in Norfolk this year became the second in England to join Slow Cities because "*Cittaslow celebrates the town that is as well as providing a framework for future improvement... Aylsham is a living town – not just a showcase for historic buildings or a dormitory serving the city. It has held on to its traditional role as a working market town, serving the area round it. Aylsham people show very strong support for their town. The award of Cittaslow status rightly celebrates their commitment to this distinctive, living and thriving place*". This movement encourages tourism, and if Kinsale fulfilled the requirements it would be able to use the name 'Slow City' and the logo, and to allow the logo to be used by "all initiatives, public and private, which contribute to the attainment of the movement's goals". Slow Cities are regularly checked by inspectors who make sure they are achieving the standards to which they have committed themselves.

#### 2015

- Every restaurant in Kinsale is to have a Slow Food option on their menu, and there is to be a Slow Food festival held in the summer celebrating and promoting the newly titled 'Slow Food Capital of Ireland.' Ludlow in England is a good example of a small town with quality food and drink firmly in their vision. They actively support Slow Food and Fair Trade, and have subsequently become known as the centre for quality food and drink in Britain.

#### 2020

- Kinsale becomes widely recognised as Ireland's most sustainable town, having implemented the wide range of ideas set out in this report.

#### 2021

- The Sustainable Kinsale accreditation is approved and awarded to other towns and businesses across Ireland who adhere to sustainable tourism practices.

### Resources

Kinsale Chamber of Tourism [www.kinsale.ie](http://www.kinsale.ie)

Cork/Kerry Tourism [www.corkkerry.ie](http://www.corkkerry.ie)

The International Ecotourism Society (TIES) official website [www.ecotourism.org](http://www.ecotourism.org)

Sustainable tourism declarations, charters, codes and information sheets. Definitions and visions of ecotourism - European Network for Sustainable Tourism Development (ECOTRANS). Extensive information on tourism and environment in Europe, certificates and labels [www.gdrc.org/uem/eco-tour/eco-tour.html](http://www.gdrc.org/uem/eco-tour/eco-tour.html)

Eco-Tip - Tourism and Environment in Europe [www.eco-tip.org](http://www.eco-tip.org)

The European Eco-label for tourist accommodation service [www.eco-label-tourism.com](http://www.eco-label-tourism.com)

Eco Cottage Tourism Development project - eco-tourism in Ireland [www.sustainable.ie/directory/subcategory.php?id=58](http://www.sustainable.ie/directory/subcategory.php?id=58)

Official Slow Food website [www.slowfood.com](http://www.slowfood.com)

Slow Cities information [www.cittaslow.net](http://www.cittaslow.net)

Ludlow, the UK Capital of Food and Drink [www.ludlow.org.uk/fooddrink.html](http://www.ludlow.org.uk/fooddrink.html)

Organic Holidays in Ireland <http://www.aboutorganics.co.uk/>



# Transport

## *Becci Neal and Bridget Hannan*



### **The Present**

Kinsale attracts thousands of visitors every year. While some of these people sail into the harbour, the majority of them arrive by road, either by car or bus, and during the summer months the town gets extremely congested. This results in a stressful and polluted atmosphere which is hardly attractive. The towns' narrow streets make it ideal for pedestrians and cyclists but the two-way traffic system and amount of vehicles travelling on them make it very unfriendly and unsafe. While there are bike-hire facilities there isn't actually anywhere to park your bike or safe routes for them to travel on. The results from a number of Cork Environmental Forum meetings in Kinsale clearly show that local residents are in great need of more efficient public transport, which at the moment has a lot of room for improvement.

### **The Vision**

In Kinsale in 2021 there are fewer cars and fewer fossil fuel resources, commuting long distances to work is no longer possible. Back in 2005 nobody enjoyed being stuck in traffic, struggling to find a parking space, the endless costs of owning a car and the problems that can arise. With the introduction of sustainable integrated transport design within the town, starting first with traffic calming and reduction and leading on to a healthier and more localised lifestyle for all within the area, Kinsale is now a far more pleasant and efficient place to live.

Over the years since 2005, as the town became more self-reliant, the need for private car ownership steadily reduced. Kinsale residents gradually came to see that while it is important for everyone to have access to a means of travel and that goods needed to be moved from one place to another, this no longer necessitated every family owning their own car. Transport in Kinsale now consists of a wide mixture of choices, from easy safe ways to get around by bicycle, car sharing clubs and lift sharing bulletin boards, improved public transport and more efficient short distance vehicles. Plans for a light railway between Cork and Kinsale are well underway. The benefits are clear for all, and people still occasionally look back with horror on those summer days 16 years ago when the streets were clogged with fume pumping cars and coaches.

### **Practical Steps**

#### **2005**

- Renewal of the Kinsale-Cork bus times, allowing adequate journeys for commuters to use the service for getting to and from work. It has been suggested that buses should run hourly at peak times of the day.

#### **2006**

- Remove 'The Wave' installation on Pier Road, and replace with a hard-shoulder for buses to pull into. A shelter should also be built which can accommodate waiting passengers.
- A Transport Officer is employed by the new Sustainable Development Centre in Kinsale (see Appendix 1), to research into opinions about pedestrianisation of Short Quay and Market Street, and the introducing of a one-way system around the town. Residents and businesses are shown case studies where pedestrianisation has improved not discouraged business as there is a lot of fear surrounding this move. A vote is then held.

- Begin, in collaboration with Kinsale Town Council, **Bike In Kinsale!** campaign for making Kinsale bicycle friendly. Primary objectives should be to;
  - Plan and implement bike paths – initially in the busiest areas of town
  - Produce maps of all cycling routes in the area
  - Provide lockers, racks and secure parking for bikes
  - Provide maintenance service and safety education
  - Promote, educate and raise awareness of the benefits of cycling
  - Ensure cyclists will be able to take their bikes on public transport for free

The campaign should look to using the more flexible county transportation funds for bike facilities and programmes.

- Set up a 'lift-share' website for Kinsale. This will have two sections; a 'lifts wanted' section, and a 'lifts offered' section. This could form a part of the [www.KinsaleLinks.ie](http://www.KinsaleLinks.ie) website which is referred to in more detail in the Economy and Livelihoods section. A notice board for the public to post journeys on should also be put in the Sustainability Centre, and promotion signs should be put on lampposts in and around the town.
- Local schools conduct a traffic survey, to identify traffic patterns and the percentage of local/medium/long distance journeys.

## 2007

- Pave the chosen pedestrianised area. Locked bollards should be put in place for delivery access.
- Begin a programme to encourage children to walk to school. This would alleviate traffic congestion within the town and cut down car emissions. Other towns and villages across Europe have very successfully established 'walking buses' where a member of staff or a volunteer parent will collect and mind children on the walk to school.
- Begin building cycle paths around the town and to surrounding villages.
- Establish a centre for recycling and reprocessing vegetable and mineral oils for and from vehicles. This centre should now begin to investigate into possibilities of having a bio-diesel filling station in Kinsale, and start promoting the idea to Kinsale residents.
- Begin horse and cart taxi, giving tours of Kinsale. There could be pick-up and drop-off points at all the car parks around the town. These tours could eventually turn into 'Sustainable Tours', taking people to see all the different sustainable features of Kinsale, including a visit to the horse stables for a demonstration of sustainable blacksmithing. Another possible tour would be a historic one, going to Charles Fort and James Fort, with a ferry connecting them.

## 2008

- Electric Vehicle (EV) circular route bus service to pick up elderly people twice a day from the Kinsale area, and bring them to town. This bus could also be used by other residents but priority would be given to those who do not have access to other means of transport. The batteries for this bus could be charged by a wind turbine on the outskirts of the town, or by a photo-voltaic system within the town.
- Dial-a-Ride scheme to be set up. This is a door to door transport system for those who are unable to use or find it difficult to use public transport, and do not have their own means of getting about. Customers pay a small registration fee, and then can ring up to book a journey anywhere within the area up to seven days in advance. The drivers of the vehicles are trained in both first aid and in the assistance of those with mobility problems. These already exist in many counties in the UK, and have proved to work very well.
- Trialling to begin of high-profile vehicles that are run on bio-diesel, such as school buses, waste collection and An Post vans. Subsidised engine conversions should be offered to the public.



- Conduct a survey of Kinsale residents to see who they work for and how far they have to travel. Identify the largest and work with them to identify options for homeworking or for liftsharing.

#### 2010

- A Bio-fuel filling station to be set up in the town as part of one of the existing petrol stations in town. As oil supplies become scarcer the government will welcome fuel alternatives such as bio-diesel and bio-fuel. The area on Pier Road where the current bus stop and garage are situated could become a central focus for sustainable transport and information.

#### 2012

- The feasibility of a funicular railway for climbing the steep hills of Kinsale is investigated.

#### 2015

- All service stations to have solar panelled roofs so that customers can bring in their solar car batteries for charging.

#### 2021

- By 2021, Kinsale should be totally weaned off petroleum transport, and be self-sufficient in its bio-fuel production, using land around the town to grow the required materials for the making and processing.

## Resources

### Books

Hargroves, Karlson & Smith, Michael. *The Natural Advantage of Nations – business opportunities, innovations and governance in the 21<sup>st</sup> Century*. Earthscan 2005  
 James, Sarah & Lahti, Torbjorn. *The Natural Step for Communities – how cities and towns can change to sustainable practices*. New Society Publishers 2004  
 Seymour, John and Giradet, Herbert *Blueprint for a Green Planet*, 1987  
 Von Weizsacker, Ernst, Lovins, Amory B. & Lovins L. *Hunter Factor Four – Doubling Wealth, halving resource use* Earthscan  
 Walter, Bob, Arkin, Lois and Crenshaw, Richard *Sustainable Cities – Concepts and Strategies for Eco-city Development*

### Websites

Centre for Sustainable Transport, definitions and visions for the future [www.cstctd.org](http://www.cstctd.org)  
 10 steps to Sustainable Transport [www.greenfleet.com.au/htm/transport](http://www.greenfleet.com.au/htm/transport)  
 Useful material on electric vehicles [www.cvleisure.co.uk](http://www.cvleisure.co.uk)  
 ...and electric bicycles... [www.ecoelectricbikes.co.uk](http://www.ecoelectricbikes.co.uk)  
 How to run a diesel engine on vegetable oil [www.autoinfozone.com](http://www.autoinfozone.com)  
 Some general bio-diesel information [www.biodieselworldwide.com](http://www.biodieselworldwide.com)  
 How to make your own fuel [www.bio-power.co.uk/makeit.htm](http://www.bio-power.co.uk/makeit.htm)  
 A model car-pool website for the UK [www.car-pool.co.uk](http://www.car-pool.co.uk)  
 Eilish Oils Ltd., producers and suppliers of Pure Plant Oil and bio-diesel in Ireland.  
 Kilmurray, NewtownMountKennedy, Co. Wicklow, Ireland. Tel: 01 286 3673, 01 284 2777  
[www.eilishoils.com](http://www.eilishoils.com) -

## Waste

*Jan Brady and Anna Aherne*



### The Present

Kinsale is producing household, business/industrial agricultural and hospital waste. Agricultural waste is usually spread on the land as slurry but this process will probably be discontinued. A sewage treatment plant is in the process of being built which will deal with the sewage problem. Some recycling facilities are in place for glass, cans and plastic but are inadequate. The collection bins are often left overflowing and the site is usually full of litter, not very welcoming or encouraging. There is no system to deal with kitchen waste or garden waste. The supermarket is selling products which are usually lavishly over packaged. Customers don't want all this excess packaging. The hardware store also sells many products that are also over packaged. In general Kinsale is not coping with its waste problem at the moment.

92% of Ireland's waste is sent to landfill. Domestic waste categories for the Cork region show that 37% of waste going to landfill is compostable. However, awareness is rising and it may start to pick up now with Cork County Council's introduction of bin charges and of course the rising price of oil. Unfortunately the increased cost of pay by weight system is encouraging illegal dumping of refuse.

### The Vision

Our vision for Kinsale in 2021 in relation to waste is that there would be no waste generated that could not be dealt with by Kinsale itself. Zero waste in other words - to avoid landfill by reducing waste at source, then reusing, recycling and recovery of all remaining waste. All waste generated would be either biodegradable or used in some other process. Most of the products which now carry lots of packaging would no longer have this type of packaging and any packaging that had to be used would have to be recyclable or reusable for some other process. As a result of oil becoming a scarce commodity a lot of waste which is now a consequence of the abundant oil era would naturally disappear and biodegradable waste could be used to generate energy or Kinsale could start to manufacture its own packaging locally.

### Practical Steps

We are proposing that the above statement can best be met through the following activities/steps to be activated between 2006 and 2012.

#### 2006:

- Kinsale Sustainability Centre will employ a Zero Waste Manager who will implement a Waste Strategy programme which will include:
- Setting up an imaginative education programme that will help educate the whole community on all aspects of waste and how to deal with it.
- Information Boards on all recycling points.
- Use newspapers/articles/organize events/video/DVD to promote awareness.
- Cork County Council instigates a local Kinsale based collection system for glass, plastic, cans and biodegradable items.
- Investigate anaerobic digesters that would be fed with biodegradable waste to produce energy/generate heat for community buildings/hospital.
- The Global Action Plan (GAP) is set up which will raise awareness through the community. GAP is a series of six classes covering topics such as transport, energy, consumerism, waste, and community. These classes show people how to take action to solve these problems/concerns.
- Arrange school visits to promote awareness around reducing waste. The children of today are the adults of 2021.
- Teachers are invited to join the GAP Programme.

#### 2007



- Kinsale Town Council and Zero Waste Manager work with the community through a series of public meetings in finding suitable location points for recycling facilities.
- Run workshops to show households/hotels/restaurants/schools etc how to set up their own compost system.
- Set up community composting scheme, which would compost all organic waste, which could not be composted at source. This scheme could be located in the car park of Kinsale Further College. Bins would be located behind a wall made from recycled materials and using sustainable building practices in its construction.
- Investigate starting a kerbside collection facility/provide biodegradable sacks.
- Apply to The National Lottery or similar organizations for funding in relation to this project.
- Continue school visits to ensure on-going participation in the goal of reaching zero waste.
- Incorporate reed beds to deal with waste from the sewage treatment plant. See under Resources for some reed bed installers.
- Have a variety of bins placed around the town for plastics, cans, glass etc instead of the one for all bin in operation at the moment.
- Have a "sustainability stand" in the library. The library could build up a special section offering books, DVD's, CDs, web site addresses etc on all aspects of sustainability as well as offering clear and free information in leaflet form.
- Arrange with local supermarket to have a Sustainable Kinsale Section. This would have a range of products produced locally with little or no packaging as in The Market Garden shop in Kinsale. Promote the idea well beforehand, work up interest, have official opening etc. This section could include a refill service for washing up liquids, cleaners etc. This idea could be used as a pilot programme with the results monitored and researched. Talk to shoppers; get their reaction to this section.
- Provide easy to read information in leaflet form. The supermarket might allow one of its employees to manage this section.
- Publish results. Set up similar schemes in other shops.
- Get someone to sponsor a sign showing sustainable section e.g. Musgraves.

#### **2008:**

- Arrange a meeting with the IFA to discuss ways it will offer support to help Kinsale become sustainable.
- Talk to Teagasc about their possible involvement in carrying out an Environmental Impact Study on agricultural waste and how it can be dealt with from a sustainable point of view.
- Talk to the EPA to discuss ways they will help Kinsale achieve its target of zero waste.
- Begin demonstrating innovative things people can do with the compost, which is now being produced from the community composting scheme. The compost could be used in school gardens or edible hanging baskets.
- Set up a community shredding system run by a bio-diesel shredder, that will take large garden clippings for a small fee. The clippings could then be sold on as compost.
- Establish links with UCC/CIT to arrange for postgraduates to research this project further.

#### **2009:**

- Start to investigate ways to generate heat using waste e.g. gasification and/or pyrolysis are ways of generating heat/electricity from waste.
- Investigate Anaerobic Digesters to take farm waste such as agricultural slurry and organic residues. Excellent examples are available here in Ireland (see link to Ballytobin in the Resources section below). Local interest groups could take tour and see how these digesters operate.
- Investigate areas that could be heated by these units e.g. the local hospital or a community centre.

- By the end of 2009 have a site located and begin work on building an anaerobic digester.
- Form Co-op of farms to supply waste to digester.
- Convert recycling vehicles to run on bio diesel.

#### 2010:

- At the Kinsale Sustainability Centre the Zero Waste Manager will investigate ways of growing a crop that could produce local paper. Agricultural residues such as straw could be used to make paper. See Resources below.
- The Zero Waste Manager will investigate the growing of hemp, which could be used to produce fabric/textiles.
- Arrange site visits to other areas to see how they are growing a crop to produce a local product.

#### 2011:

- The Zero Waste Manager together with local farmers and other interested group's come together to implement a plan in relation to the production of a local hemp crop for local use.
- Start field trials on growing hemp.
- Publish results.

#### 2012

- A small local paper milling plant will be set up to make paper for Kinsale. Initially this is used for paper bags and packaging.
- Organize marketing drive to promote "Kinsale Paper".

#### 2012-2021

- The Zero Waste Manager continues to investigate ways to make Kinsale sustainable in relation to waste. He/she will research the inputs and outputs for Kinsale and put in place ways to achieve the goal of a sustainable Kinsale by 2021.

### Resources

Sustainable Ireland Co-op – [www.sustainable.ie](http://www.sustainable.ie)

Cork County Council, County Hall, Cork. [www.corkcoco.ie](http://www.corkcoco.ie)

Feidhlim Harty Wetland Systems – [www.ballymaloe.ie/fhwetlands/](http://www.ballymaloe.ie/fhwetlands/)

Enfo, 17 St. Andrew Street Dublin 2. Tel 1890200191 or 01 888 3001: Fax 01 8883496: e-mail: [info@enfo.ie](mailto:info@enfo.ie): Website: [www.enfo.ie](http://www.enfo.ie)

A local council in Norfolk, England, showing ways it is dealing with its waste. <http://www.breckland.gov.uk/breckland/waste.nsf/pages/index.html>.

Fortwilton Ltd. Supplier of High Quality Litter Management Products, 6 Cedar Estate, Killarney Road, Bray, Co. Wicklow.

Example of working anaerobic digester in Co. Kilkenny

[www.irishenergy.ie/uploads/documents/uploads/publications/Task\\_29\\_camphi II community-Ballytobin.pdf](http://www.irishenergy.ie/uploads/documents/uploads/publications/Task_29_camphi%20community-Ballytobin.pdf).

Bioregional Development Group – has great community examples of how waste can be managed. [www.bioregional.com](http://www.bioregional.com)

A great list of links on recycling can be found at Patricia McKenna MEP's website, [www.pmckenna.com/resource/recycling.html](http://www.pmckenna.com/resource/recycling.html)

Tips of All Sorts – an excellent resource of interesting recycling ideas [www.tipsofallsorts.com/recycle.html](http://www.tipsofallsorts.com/recycle.html)

See how they do it on Merseyside [www.clean-merseyside.com](http://www.clean-merseyside.com)

-- or in Devon. [www.dcrn.org.uk](http://www.dcrn.org.uk)

or, one of the best ones, in South Central Iowa [www.sciswa.org](http://www.sciswa.org)

Irish Peatland Conservation Council [www.ipcc.ie](http://www.ipcc.ie)

The Community Composting Network in the UK [www.othas.org.uk/ccn](http://www.othas.org.uk/ccn)

The Compost Resource Page [www.oldgrowth.org/compost](http://www.oldgrowth.org/compost)

The Master Composter Site – a wealth of stuff here.. [www.mastercomposter.com](http://www.mastercomposter.com)

Environmental Protection Agency - [www.epa.ie](http://www.epa.ie)



# Energy

***Pernilla West & Bridget Hannan***



## **The Present**

Kinsale town is dependant on an outside supply of oil and other fossil fuel to generate electricity and heating for homes, businesses and all public buildings. This situation is not sustainable as we are approaching a time of oil depletion. Although fossil fuels will still be available, it won't be affordable for the average person. When this time comes questions will be raised within the community.

- How to cook and store food?
- How to treat water?
- How to heat, light and power homes, schools and other buildings?
- How to priorities the use of energy to provide for our needs rather than for luxuries?

## **The Vision**

Our aim for Kinsale is that by 2021 the majority of its energy will come from sources within a ten-mile radius. With this in mind we would envisage Kinsale as having pulled all its resources together and set up a far more sustainable energy network, incorporating several renewable energy sources. Wind would be the main one. It has been proven that, with wind, you can harvest twenty times more energy per hectare than energy crop plantations of short rotation coppice<sup>1</sup>. With wind speeds of 30 mph providing over 3 1/2 KW of power it will certainly meet Kinsale's energy requirement if combined with other sources such as solar, anaerobic digesters<sup>2</sup> and Combined Heat and Power (CHP)<sup>3</sup>.

In addition to the introduction of renewable sources of energy, there will also be actions put in place to help Kinsale in saving energy in the first place. This needs to be done as soon as possible. To do this there will be an Energy Rating Scheme set up, which will survey buildings. The data will be used to analyse how energy efficient they are and also to identify what changes need to be made to ensure that the buildings no longer waste energy. Educational resources will be incorporated so that people can follow clear and simple guidelines to help them reach a 5 star rating. By 2021 people will look back on the amount of fossil fuel energy it took to sustain the 2005 lifestyle and be astonished that we were so wasteful.

## **Practical steps**

### **2005**

- Provide every household and business with information on practical steps to save energy. These steps include such things as using long-life light bulbs, switching off all electrical appliances instead of leaving them on stand-by, only boiling the required amount of water instead of always filling the kettle, having properly insulated immersion tanks etc. This information has already been produced by ENFO and could be sourced from them. It would need just a single sheet specific to Kinsale.

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<sup>1</sup> Broadleaved trees are cut during the dormant season, which then produce continual multi stems that are harvested for wood products.

<sup>2</sup> Waste materials such as human sewage and food scraps are used to produce methane, which is used to produce heating and power.

<sup>3</sup> Combined Heat and Power involves the simultaneous production of heat and electricity from the same primary fuel source. A fuel that is perfectly suited to this is woodchip made from the tree surgeons trimmings. From an article in "Construct Ireland" by Richard Douthwaite - he mentions that an estimated 30,000 houses in the London area could be heated from this fuel source alone.

- Encourage people to switch to sustainable energy supplier such as Airtricity, who guarantee that all the power they provide is generated from renewable sources (see Resources).
- Fit small solar panels to public lampposts, so as to make them energy autonomous, their high visibility being a good public awareness exercise.

## 2006

- Introduce the Energy Rating Scheme.
- Implement new rigorous insulation standards for any new development in Kinsale town.
- Promote the use of double-glazing windows and proper roof insulation. Set up Buyers Clubs for insulation, so as to make it more affordable.
- Setup of a group to locate a suitable site for a wind farm, and to develop a wind farm co-op. Places to consider for this would be the Old Head, or possibly off shore. Representatives from the group would make visits to other wind farms in Ireland. The group will organize meetings aiming to increase people's awareness of wind farms and also discuss the possibility of their becoming shareholders in the co-op (the Baywind Energy Co-op in the UK is an excellent example of this).
- Identify site and begin the planting of a short rotation coppice woodlands for wood supply for highly efficient woodstoves.

## 2007

- Continue programme of work on private dwellings to improve energy efficiency levels.
- Setup an anaerobic digester to heat the hospital, bringing in farm waste from surrounding farms. If combined with a combined heat and power plant (CHP), this could also power a number of neighbouring homes.
- The wind farm co-op applies for planning and work begins on the construction of the wind farm.
- Solar panels and photo-voltaics<sup>4</sup> begin to be installed in hotels, B&Bs and restaurants. Solar Clubs are set up in order to make solar water heating systems more affordable. Groups of 10 or more householders undertake to buy systems, resulting in their being in a very strong position for negotiating the price down.

## 2008

- Set up a second Combined Heat and Power scheme (CHP) in town, to heat school and community centre, powered by biomass from the Council's hedgerow pruning in the Kinsale area and from willow coppice plantations, part funded by LEADER and Sustainable Energy Ireland.
- Investigate the potential of the House of Tomorrow scheme<sup>5</sup>
- Encourage farmers to grow oats and straw for biomass heating<sup>6</sup>.

## 2010

- First wind farm is up and running. It is supplying 50% of Kinsale's energy on a private wire system, ie. supplying the town rather than feeding into the grid. This leads to far higher levels of efficiency.
- The buildings in the Energy Rating Scheme are being assessed again to ensure that they are reaching their targets.

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<sup>4</sup> A type of solar panel that generates electricity rather than hot water from the sun.

<sup>5</sup> This is an initiative from Sustainable Ireland aimed to accelerate improvements in the quality of energy features in Irish housing. It will do this by funding projects researching, developing and demonstrating more sustainable energy practices. Its focus is to stimulate the widespread uptake of superior sustainable energy planning, design, specification and construction practices in both the new home building and home improvement markets.

<sup>6</sup> A system where oats, straw and coppiced wood are burned to produce heat.



- 40% of the buildings in Kinsale now have the majority of their hot water supplied from solar water heating systems<sup>7</sup>.

## 2015

- Wind farms are now supplying 80% of Kinsale's energy.
- Anaerobic digesters and CHPs are supplying an additional 10% each.
- 80% of Kinsale buildings have solar heating systems set up. A grant system is now in place, allowing people to pay for their panels in instalments over a long period of time.

## 2021

- Kinsale has now achieved its target. It is the first town in Ireland where all heating and power come from renewable energy sources. The town has become a role model for Irish towns and cities who wish to do the same. It is a zero-carbon town.

## Resources

### Books

Ernst Von Weizsäcker, Amory B Lovins, L Hunter Lovins *Factor Four - Doubling wealth, halving resource use* Earthscan Books

Ecologist Magazine (ed) *Go Mad - 365 Daily ways to save the planet* Green Books (UK)

Richard Douthwaite (ed) *Before the wells run dry - Ireland's Transition to Renewable Energy* FEASTA/Green Books

Lester R Brown *Plan B. Rescuing a planet under stress and a civilization in trouble* - Earthscan Books 2005

Brí Nua Community Wind Energy Group, the Mayo Community Wind Energy Group, and the Western Development Commission (edited by Douthwaite, Richard) *To Catch the Wind To Catch The Wind: The Potential for Community Ownership of Wind Farms in Ireland* available for downloading by logging onto the web site [www.wdc.ie](http://www.wdc.ie) or by contacting the WDC directly at Western Development Commission, Dillon House, Ballaghaderreen, Co. Roscommon tel. 094 986 1441. **e-mail:** [fionacandon@wdc.ie](mailto:fionacandon@wdc.ie)

### Internet

Airtricity (you can transfer you domestic energy bill to them, and know by doing so that you are buying your power from renewable sources <http://www.airtricity.net/>)

Baywind Energy Co-operative [www.baywind.co.uk](http://www.baywind.co.uk)

Combined Heat and Power systems. [www.chpa.co.uk](http://www.chpa.co.uk)

Department of Communications, Marine and Natural Resources. CHP and operating wind farms. [www.dcmnr.gov.ie](http://www.dcmnr.gov.ie)

Pure Technology Ltd. Convent Road, Bruff, Co. Limerick, Email: [info@pet.ie](mailto:info@pet.ie), Telephone: 061 382882, Fax: 061 382883 [www.pet.ie](http://www.pet.ie)

For information on Solar, Wind and Geo-Thermal systems contact [www.sei.ie/reio.htm](http://www.sei.ie/reio.htm), Sustainable Energy Ireland, Renewable Energy Information Office, Shinagh House, Bandon, Co. Cork, Email: [renewable@reio.ie](mailto:renewable@reio.ie)

Telephone: 023 29145, 29146, Fax: 023 29154

PREDAC - European action group for renewable energy. [www.cler.org](http://www.cler.org)

To Catch The Wind - Renewable energy partnership. Provide an excellent free booklet (see above) [www.wdc.ie](http://www.wdc.ie)

Andy Wilson, Bioclimatic House Design and Renewable Energy Services, Corrig, Sandyhill, Westport, Co. Mayo. Tel: 098 26281 or email [futureenergy@eircom.net](mailto:futureenergy@eircom.net)

Solaris Solar Energy Systems, Co. Cork <http://www.solaris-energy.com/>

EcoPlus (Co.Kerry) <http://www.ecoplusonline.com>

Cork City Energy Agency <http://www.corknrg.com/>

The Centre for Alternative Technology (Wales) <http://www.cat.org.uk/>

Irish Wind Energy Association (IWEA) <http://www.iwea.com>

Dunstar Ltd - geothermal heat pumps, Co. Cork <http://www.solterra.ie>

Biodiesel - Joshua Tickell's Biodiesel Report <http://www.VeggieVan.org>

British Wind Energy Association (BWEA) <http://www.bwea.com>

British Photovoltaic Association <http://www.pv-uk.org.uk/>

Solar Clubs Project - a great scheme from the UK <http://www.cse.org.uk/>

SolarTwin <http://www.solartwin.com/>

<sup>7</sup> Use of solar panels to heat water.

# **Appendix 1**

## **The Kinsale Sustainability Centre – A Proposal - By Rob Hopkins**

The Kinsale Energy Descent Action Plan sets out clearly a timetabled plan for Kinsale to make its transition from a high energy economy to a low energy one. This is essential work, and needs to be initiated as a matter of urgency, as Dr. Colin Campbell's articles makes clear. It is our proposal that the vehicle required to kick-start this process is the establishment of a Kinsale Sustainability Centre. It is the intention of this Appendix to sketch out an outline of how such a centre might operate and what its tasks would be.

### **The Resource**

At present, Kinsale Further Education College's Practical Sustainability course produces many students each year who are qualified as permaculture consultants. It is our proposal that a Community Employment Scheme be created in order to fund 5 posts, which would run for a year. This would then give the best 5 students from each year the opportunity to gain work experience of applying permaculture on a community level. This would be invaluable experience for them.

### **The Kinsale Sustainability Co-operative**

A new organisation would be set up in order to co-ordinate this project. It is recommended that this be run and managed as a Co-operative. One of the requirements for membership of the Co-op will be to have completed a Permaculture Design Course. There is excellent advice and support for co-operatives from the Centre for Co-operative Studies at UCC.

### **Co-op Activities**

To begin with, the Co-operative would not require dedicated premises. It could either rent office space in the town, or it could use the strawbale house at Kinsale FEC. It is the intention though, that over time, the Centre would expand and become a dedicated Centre with a base in Kinsale town. This would then allow it to expand its work and to meet a number of needs currently unmet within the town. We anticipate some of its possible tasks as being;

#### **Organic/Green Shop**

At present Kinsale has no wholefood shop or organic food shop. This would be a very useful addition to Kinsale. It would also serve to make 'green' products, such as detergents and toiletries, available.

#### **Organic/Vegetarian & Youth Café**

The shop could also include a café, which could also serve as the Youth Café outlined in the Youth chapter above.

#### **Organic Market Garden**

The Co-operative could design and manage an organic market garden in Kinsale, which would supply produce for the shop/café and would also serve as a demonstration garden. This garden would serve as the first urban agriculture project in Kinsale, kick-starting the revival of urban food growing as outlined in the Food chapter above.

#### **Community Composting Scheme**

The need for a community composting scheme is one of the things that comes up most often in our community consultations. A well managed and well run composting scheme would be a very important addition to Kinsale, and many examples now exist of good community composting schemes. This would be run on a site within the town, and would compost the domestic organic refuse of the surrounding community.



## **Training**

The Co-operative would also organise and deliver training courses within the town for a wide range of community groups. These could include gardening courses, energy efficiency courses and many others as well. Funding would be sought so that these could be delivered at low cost or free of charge.

## **The Posts Generated**

It is proposed that 5 posts are created, as follows:

- An Eco-Tourism Officer – charged with implementing the Tourism section of this report.
- A Green Building Officer – to work with the County Council, the Town Council, the building industry and the local community to promote greener approaches to building
- A Local Food Officer – to network the various bodies with an interest in local food and to implement the recommendations in this report
- A Zero Waste Officer – to work at implementing the Zero Waste strategy as set out in the Plan, in liaison with the Waste Management Officer at Cork County Council.
- A Local Economy Officer – to develop the [www.kinsalelinks.ie](http://www.kinsalelinks.ie) website and to co-ordinate the establishment of the local economy.

Each of these posts would run for 1 year and after that period a new person would be appointed. On leaving, the outgoing post-holder would be required to write up a summary of the work they had done and their recommendations for the incoming person.

## **Funding**

It is our hope that, on the back of this report, we would be able to secure funding for this initiative, possibly from FAS or from another source. We will be investigating potential sources of funding over the coming months. One of the most important things about this initiative is that it doesn't go the way of many similar projects, which do extremely well while the funding is flowing, and then disappear once the funding dries up. We would, from the outset of designing the Co-op, design it in such a way that it begins to generate income streams from an early stage. The Co-op would also become the vehicle by which the County and Town Councils would implement their sustainability initiatives, which could become a regular source of funding as the Co-operative proved its ability to deliver a high quality and reliable service.

## **Conclusion**

We feel it is essential that in order to navigate Kinsale's journey to 2021 we have some informed and inspired people working in the community to make this Action Plan a reality. They would be co-ordinating this process of managing Kinsale's descent from a wasteful, high energy settlement to a sustainable one. In the Practical Sustainability course at Kinsale FEC, Kinsale has an extraordinary resource, this is the first full-time two year course in Europe training in people in practical solutions to environmental problems. The course has really put Kinsale on the international map as a pioneering place, but this is yet to really manifest in the town itself. This co-operative will serve as a bridge from where we are now to where we want to be.

We feel that the Co-operative as outlined above is the best vehicle for taking the ideas of this report off the page and into reality in Kinsale, and we hope very much that the publication of this report will do everything possible to make that a reality.

## **Case Studies of Similar Centres**

The Kinsale Sustainability Centre has been inspired by similar projects in Ireland and the UK. The two main ones of these are the Cultivate Centre in Dublin and the CREATE Centre in Bristol, UK.

### **The Cultivate Centre, Dublin – [www.cultivate.ie](http://www.cultivate.ie)**

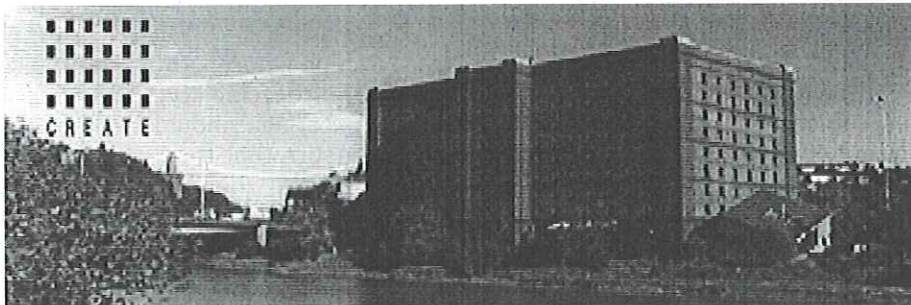


Based in Temple Bar in Dublin, the Cultivate Centre is Ireland's most pioneering and well respected Sustainability Centre. Run by the Sustainable Ireland Co-operative ([www.sustainable.ie](http://www.sustainable.ie)) it is home to the annual Convergence Festival, Ireland's leading sustainability event. Convergence has brought many of the leading names in sustainability to Ireland, and has hosted many ground breaking events.

The Cultivate Centre itself hosts exhibitions featuring sustainable solutions and an excellent shop containing a large selection of books and products. They co-ordinate an exciting calendar of workshops, talks, and cultural events throughout the year and the Yard at the back of the building has been transformed into an urban garden centre, specialising in edible and interesting plants. Cultivate sees itself as a resource and information hub for the network of projects and individuals across the island working to create a more sustainable world. It is also home to the Dublin Green Map Project and will soon also host the Cultivate Learning Centre.

Cultivate leads the way, and has gained widespread recognition for its work. It can be found at 15-19 Essex Street West, Dublin 8

### **The Create Centre - [www.bristol-city.gov.uk/create](http://www.bristol-city.gov.uk/create)**



The CREATE Centre is owned and run by Bristol City Council and hosts its Sustainable Development Teams. Housed in a renovated cigarette factory, it is also home to over 20 voluntary organisations, charities, small businesses. These groups all work in different areas of sustainable development, such as Sustainable Energy, Recycling, Eco-tourism, Local Agenda 21, Education and Research, Air and Water Quality and Wildlife Conservation.

It offers Conference Facilities and meeting rooms for hire to local organisations. It also runs an annual themed Events Diary which includes large public Open Days, lectures and talks, exhibitions and displays, workshops and tours. Just outside the Centre is The Ecohome. This is a demonstration home full of ideas and information on eco-friendly construction and living, open to the public for special tours. It also hosts the CREATE Gallery, which is a spacious and highly adaptable space on the ground floor is available for hire on a weekly basis. The downstairs of CREATE hosts a Recycling Exhibition which is a hands on journey through waste and recycling available for use by schools and groups for environmental education. There is also a Café.

CREATE serves as a fantastic resource, both for those working to promote sustainability, and for the public who are interested in it. It has done a great deal to put Bristol at the forefront of being one of the most forward looking 'green' councils in the UK.



## Appendix 2

### A Proposed Sustainable Building Code for Kinsale.

It is proposed in the Housing chapter above that in 2008, Kinsale Town Council launch a set of criteria to which any new planning application in Kinsale must comply. This is an approach which is already working very successfully elsewhere. The London Borough of Enfield has produced guidelines for sustainable design and construction for both developers/builders and householders. Each new planning application in the area requires a 'Sustainability Assessment'. The Council also organises training for staff/key stakeholders/local builders and has 4 in-house experts on sustainable building. Developing a similar approach in Kinsale would be a pro-active way of ensuring that all new development in Kinsale reaches the standards that will be essential in a lower energy future.

#### **Construction Materials**

**Giving consideration to the materials used in every aspect of the building's construction will ensure that their adverse environmental impacts are minimised.**

- The use of whole, unprocessed, locally sourced materials is encouraged where possible i.e. timber, stone found on the site or from demolition within the Cork region, recycled slates, earth, clay, straw and other natural fibres. Timber should be FSC certified if not from local forests and the use of tropical hardwoods is should be avoided.
- Second hand materials should be used if possible in preference to new. i.e. structural timber, floorboards, doors, roofing etc.
- Try to avoid wastage of materials. When designing try to incorporate the use of standard sizes to avoid unnecessary cutting. There should be no skips or bonfires and all packaging materials should be separated and sent for recycling where possible.
- Low embodied energy materials are preferred except where other materials can be justified in terms of life cycle performance and recyclability.
- Materials, which are derived from petrochemical materials, should be kept to a minimum. If using any plastics materials try to ensure that they are derived from recycled plastics. PVC free solutions should be used wherever possible.
- Materials and design should take account of future re-use. Soft mortars, mechanical fixings avoiding glues, screws instead of nails etc.

#### **Design for Low Energy**

**Careful thought given to energy efficiency at the design stage of the building will lead to a greatly reduced environmental impact as well as making the house much cheaper to run.**

- Houses should be built with the objective of achieving at least Zero CO2 rating (as defined in the DETR/BRECSU Best Practice Guide No.53). If at all possible a better level should be the objective, such as Zero Heating.
- In order to achieve this, appropriately high levels of insulation and managed ventilation systems should be employed. Designs should make best use of passive solar energy, good levels of daylighting and wind sheltering.
- Low energy lighting and appliances should be used.
- Efficient heating equipment using LPG boilers, highly efficient wood burning or multi fuel stoves or electricity should be used. Oil fired heating should be avoided.
- Designs should incorporate well insulated thermal mass and heat recovery systems if appropriate.
- Buildings which strive to generate a significant amount of their own power needs, either through the use of photovoltaic cells, wind power or any other means are particularly encouraged.

## **Accessibility**

**Buildings should be created with consideration for all stages of one's life and also so as not to exclude any future visitors.**

All houses should be designed to facilitate access and use by disabled people, prams, push chairs etc. including level access and egress, appropriate door widths, disabled toilet facilities on the ground floor.

- Buildings should be designed to facilitate adaptability, extension and alteration in the future.

## **Internal Environment**

**As far as possible, all houses should be constructed with materials, which avoid the use of toxic and carcinogenic substances.**

- Timber treated with highly toxic materials such as copper chrome arsenic and lindane will not be permitted and suppliers of timber must be asked to provide details of treatment chemicals where used. Low toxicity chemicals such as boron/borax should be used internally.
- Natural fibres should be preferred to artificial and petrochemical products.
- Solvent free paints, timber oil and varnishes, glues and other finishes should be preferred. Paints and stains from natural and organic or low solvent, water based should be used.
- Composite boards and other timber products such as MDF, OSB, plywood, chipboard, PSL. LVL should have certified low formaldehyde or preferably zero formaldehyde content.
- The use of vinyl and high formaldehyde carpeting should be avoided.

## **Design in Context**

**Buildings should be designed which are adapted and designed to fit the landscape, rather than adapting and designing the landscape to suit the house.**

- Care should be taken during construction to minimise disturbance to the existing ecology of the site, plants and wildlife. Any site works, foundations, draining work should be organised to minimise impact and soil compaction.
- The site should not be levelled nor should quarry stone be spread for levelling purposes except within the immediate curtilage of the building and for any agreed access road (routes and dimensions of proposed internal roads should also be shown in the submitted plans).
- Foundation design should attempt to follow the principle of touching the earth lightly. Large earth moving will only be permitted when earth sheltering is employed. Dynamiting or excessive rock breaking is discouraged.
- The external appearance, location, massing and arrangement of the building will be in accordance with the agreed principles of the overall development. This is based on respect for the site, the relationships between neighbours, visual impact of the buildings and local distinctiveness. Where buildings are grouped together there will be an expectation of visual harmony between them.

## **Water/Sewage Treatment**

- Appliances and strategies for the conservation of water and the reduction of use should be outlined.
- If a composting toilet is employed, residents must outline its design, its proper ventilation as well as how the faecal matter will be safely and hygienically composted in such a way as to create no odour or fly problem.
- Strategies for rainwater harvesting will be encouraged and welcomed.
- If flushing toilets are used, they must be low flushing models, preferably with urine separation.

*Adapted from The Hollies Design Criteria, developed by Rob Hopkins of the Hollies Centre for Practical Sustainability and Professor Tom Woolley of Queens University Belfast. A pdf of this document is available at [www.theholliesonline.com](http://www.theholliesonline.com)*

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