

## **The Transition Handbook From Oil Dependency to Local Resilience by Rob Hopkins**

Central to the book is the concept of resilience. Resilience refers to the ability of a system, from individual people to whole economies, to hold together and maintain their ability to function in the face of change and shocks from the outside. The Transition Handbook argues that in our current efforts to drastically cut carbon emissions, we must also give equal importance to the building of resilience...a culture based on its ability to function indefinitely and to live within its limits, and able to thrive for having done so.

We need new stories that paint new possibilities where we see ourselves in relation to the world around us, that entice us to view the changes ahead with anticipation of the possibilities they hold, and that will, ultimately, give us the strength to emerge at the other end into a new, but more nourishing world.

What might environmental campaigning look like if it strove to generate this sense of elation rather than the guilt, anger and horror that most campaigning invokes? ...The Transition movement is an attempt to design abundant pathways down from the oil peak, to generate new stories about what might be waiting for us at the end of our descent, and to put resilience-building back at the heart of any plans we make for the future.

Unless we can create this sense of anticipation, elation and a collective call to adventure on a wider scale, any government responses will be doomed to failure, or will need to battle protractedly against the will of the people. Imagine if there were a way of creating that sense of positive engagement and new storytelling on a local, regional, or even a nation-wide scale. The Transition Handbook is an exploration of that potential, an immersion in the possibilities of applied optimism, and an introduction to a movement growing so fast that by the time you read the book it will be larger still...This book represents a new way of looking at what our future might hold, arguing that by taking a proactive response rather than a reactive one, we can still shape and form that future, within the rapidly changing energy context, in such a way that it ends up preferable to the present.

### **THE HEAD**

#### **Why peak oil and climate change mean that small is inevitable**

"Any intelligent fool can make things bigger, more complex, and more violent. It takes a touch of genius - and a lot of courage - to move in the opposite direction." - Albert Einstein

The first part is called 'The Head' because it focuses on the concepts and issues central to the case that we need to be preparing for a future which looks very different from the present. It begins with an exploration of peak oil and climate change, the nature of the challenges they present, and why they so urgently necessitate our rethinking a number of very basic assumptions as well as the scale at which we operate. It goes on to look at what kind of a world we could end up with if we don't respond imaginatively to those dual challenges, and then sets out the thinking and the concepts underpinning Transition Initiatives. These initiatives are an emerging response - a powerful carbon reduction "technology."

#### **Chapter 1: Peak Oil and Climate Change The two great oversights of our time**

##### **What is peak oil? Why it isn't the last drop that matters**

The key point here is that it is not the point when we use the last drop that matters. the moment that really matters is the peak, the moment when you realize that from that point onward there will always be less magic potion year-on-year, and that because of its increasing scarcity, it will become an increasingly expensive commodity.

##### **Some key indications that we are nearing the peak**

- observable pattern: peak in discovery tends to occur 30-40 years before peak in production.
- discovery peaked in 1965
- Since January 2005, world oil production has been basically flat, despite a very high price.
- the nature of new discoveries that the market gets excited about (tar sands, using precious natural gas and burn it to make steam to produce 'synfuel.' Matt Simmons calls it turning gold into lead.
- IEA reports becoming increasingly frank (2007: "supply crunch", 2008: 6 to 9% decline?)
- changing financial practices of the major oil companies: mergers, buying back it's stock

### **Peak when?**

George Monbiot puts it in stark terms: "Our hopes of a soft landing rest on just two propositions: that the oil producers figures are correct, and that governments act before they have to. I hope that reassures you."

"I feel it is my duty, given the social and economic chaos peak oil will undoubtedly produce, to stick very closely to defensible assumptions. If you ask me whether I personally think we'll make it to 2010, my answer is 'probably not.' Random factors and Murphy's Law more or less rule out everything running smoothly. this however is not my analysis, but gut feel and hunch. On the hunch basis 2008 would be my answer, but 2010 is my analysis." - Chris Skrebowski, editor of Petroleum Review

The majority of estimates are now falling between 2010 and 2015, with very few credible researchers placing their forecasts beyond this 2020 bookend. Having said that, the exact date of peak oil is really not so important. What matters is the fact that it is inevitable, it is going to be happening soon, and we haven't even begun to think what we might do about it.

### **Climate change**

As someone on BBC Radio said recently, "I don't know about carbon emission levels but I do know that when a wasp lands on my Christmas cake something isn't right."

### **The greenhouse effect**

#### **Is there such a thing as a safe limit?**

The emerging consensus in recent years has been that the imperative is to keep below 2 degrees C at all costs...a recent paper by James Hansen argues that even 2 degrees is too high, given the rate of degeneration of the Arctic sea ice and the Greenland ice sheets, and that 1.5 - 1.7 degrees C is more in line with adhering to the precautionary principle...we are already committed to a 1.4 degree rise whatever we do now.

Until recently, it was believed that the scale of climate change necessitated cutting our emissions by 90% by 2050, or even by 2030...reflecting on the implications of James Hansen's recent paper..., George Monbiot said "...we're talking about measures which require global revolutionary change." 90% cuts are no longer adequate, he said, none, even, are 100% cuts. We are looking at 110-120% cuts, in other words sequestering more carbon than we produce - clearly a monumental and unprecedented CHALLENGE.

### **The intertwining of peak oil and climate change**

If we don't fill the liquid fuels gap with conservation and a concerted program of local resilience, and if we refuse collectively to acknowledge the reality of energy descent (the downward trend in the net energy underpinning society), we will rapidly drive ourselves beyond the climatic tipping points and will unleash climate hell. If we see climate change as a separate and distinct issue from peak oil, we risk creating a world of lower emissions but one which is, in terms of oil vulnerability, just as fragile as today's - if not more so - as energy prices rise.

### **Solutions to Peak Oil without considering Climate Change (a la Hirsch Report):**

Coal to liquids

gas to liquids  
relaxed drilling regulations  
massively scaled biofuels  
tar sands and non-conventional oils  
resource nationalism and stockpiles

**Solutions to Climate Change without considering Peak Oil (a la Stern Report):**

climate engineering  
carbon capture and storage  
tree-based carbon offsets  
international emission trading  
climate adaptation  
improved transportation logistics  
nuclear power

**When Seen as Two Aspects of the Same Problem: Building Resilience Plus Cutting Carbon Emissions (a la Hopkins):**

building local resilience  
tradable energy quotas  
decentralised energy infrastructure  
the Great Re-skilling (Skilling Up for Powering Down)  
localized food production (food feet instead of food miles)  
energy descent planning  
local currencies  
local medicinal capacity

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Bryn Davidson - [dynamiccities.com](http://dynamiccities.com):

Many potential responses to climate change do nothing to reduce oil dependency of our economy and society.

Many potential responses to peak oil could lead to disastrous acceleration of climate change.

Energy transition strategies prioritize investment, planning, design and policy strategies that reduce both emissions and oil dependence.

1. Plan - Scenarios, Targets, and Adaptation plans
2. Power Down - Energy productivity and relocalization
3. Power Up - Clean and secure and resilient energy supplies
4. The Future - Health, prosperity, and stewardship

**Can peak oil engage people more effectively than climate change?**

Hopkins argues that peak oil, if presented in the way the book outlines, can do more to engage and involve people and communities than climate change.

- an into-the-fuel-tank problem rather than end-of-tailpipe problem
- people perceive themselves more affected by rises in price of a key commodity such as liquid fuels than by changes to climate
- puts a mirror up to a community and asks: "What has happened to the ability of this community to provide for its basic needs?"
- more obviously relevant to peoples everyday lives
- barrels of oil more easy to visualize than tonnes of gas
- may visibly impact our lives within a few years (climate change seen by many as a gradually unfolding process)
- climate change says we *should* change, whereas peak oil says *we will be forced* to change.

## The contradictions of the Hirsch report

The Hirsch report for the U.S. Dept. of Energy is an extremely important document, as the first 'official' government report to take peak oil seriously. Robert Hirsch believes peak oil is "a really incredibly difficult and incredibly severe problem." However, the "viable mitigation options" the report considers are at odds with what Hopkins proposes in the Transition Handbook. There is no evidence of concern for climate change issues, and the basic premise of the report is that business as usual must be preserved at all costs. [As John Rawlins likes to point out, the real lesson to be learned from the Hirsch Report is that if peak oil occurs in less than 10 years, there's no way that business as usual can be preserved. Hopkins agrees: "Hirsch laid out a clear and perfectly reasoned argument why we cannot possibly keep all our cars going and why we need to break our addiction to the car. He just hadn't realized that that was what he was doing."]

If one were to take Hirsch's recommendations to heart, however, they could lead to policy choices being taken which are in effect collective suicide, hastening the headlong plunge towards climate chaos. We must address both climate change and peak oil from the outset.

Hopkins argues that we must always be sure we are asking the right questions. The question is not 'How can we keep everything going as it is?' We should instead ask how we can learn to live within realistic energy constraints. **Rather than deciding our plan of action first and then picking the energy options to match it, we should start by basing our choices on asking the right questions about the energy available to underpin our plans.**

When society decides to put its weight behind change, things can move very fast. While some of this needs to be driven at a national government level, much of the momentum and pressure, as well as the diversity of projects and initiatives that need sanction or support from government, can come from the local level. **People need to hunger for these changes, and to see them as infinitely more desirable than the present.**

## Chapter 2: The View from the Mountaintop

### Evaluating Possible Ways Forward

We are going to see extraordinary levels of change in every aspect of our lives. Can we navigate our societies away from dependence on cheap oil in such a way that they will be able to retain their social and ecological coherence and stability, and also live in a world with a relatively stable climate? Many people have set out different scenarios.

**There are three mindsets that underpin the diverse spectrum of possibilities:**

**Adaptation:** scenarios that assume we can somehow invent our way out of trouble

**Evolution:** scenarios which require a degree of collective evolution, a change of mindset, but which assume that society, albeit in a low-energy, more localised form, will retain its coherence.

**Collapse:** scenarios that assume that the inevitable outcome of peak oil and climate change will be the fracturing and disintegration, either sudden or gradual, of society as we know it.

Adaptation scenarios all rely on technology and economic growth, relying on "Three Miracles" (P. Wack): A technological miracle, a socio-political miracle, and a fiscal miracle.

Collapse scenarios show what the future will be unless we are able to change what we are doing. Much of what we would need to do to prepare for Collapse scenarios we would need to do anyway to prepare for the Evolution scenarios. Hopkins argues that rather than trying to terrify people into change through presenting them with visions of collapse, the Evolution scenarios could provide a vision of an end goal so enticing that society would want to engage in the transition towards them.

Evolution scenarios: Enlightened Transition/Powerdown (government led path of co-operation, conservation, sharing); Earth Stewardship (creatively descending the energy demand slope as a 'mirror

image' of the creative energy ascent we have experienced); Building Lifeboats (industrial civilization cannot be salvaged in anything like its present form; a process of building community solidarity, and preserving the essentials of life).

### **Why a future with less energy ends up looking somewhat inevitable**

- Bryn Davidson, Dynamic Cities (Vancouver)
- Portland report: 1. Long term transition 2. Oil Shocks 3. Disintegration

One of the key arguments of the Transition Handbook is that when faced with these three scenarios, our best chance of a successful collective transition will not come from presenting people with the possibility of Scenarios 2 and 3. ..."healthy functioning requires that we have faith that our needs will be met in the future." (Winter and Kroger)

Our best chance of dealing with climate change and peak oil will emerge from our ability to engage people in seeing the transition to Scenario 1 as an adventure, something in which they can invest their hope and their energy...I believe that the only way through the monumental transition necessitated by the passing of the Age of Cheap oil will be a rethinking of how we engage people in a transition of this scale. The tools we have had at our disposal until now are inadequate: we need a new toolkit, as well as a new way of seeing our role....Perhaps our work preparing communities for transition should similarly be constantly reinventing itself and forgetting what it is called: a creative, engaging, playful process, wherein we support our communities through the loss of the familiar and inspire and create a new lower energy infrastructure which is ultimately an improvement on the present.

### **Why Energy Descent?**

Term comes from David Holmgren, "I use the term 'descent' as the least loaded word that honestly conveys the inevitable, radical reduction of material consumption and/or human numbers that will characterise the declining decades and centuries of fossil fuel abundance and availability."

The concept of energy descent, and of the Transition approach, is a simple one: that the future with less oil could be preferable to the present, but only if sufficient creativity and imagination are applied early enough in the design of this transition. We have a choice. We can descend the hill on which we are standing if the same imagination and drive that got us to the top in the first place can be harnessed... The idea of energy descent is that each step back down the hill could be a step towards sanity, towards peace and towards wholeness. It is a coming back to who we really are...it is ultimately about energy ascent - the re-energizing of communities and culture.

## **Chapter 3: Why Rebuilding Resilience Is As Important as Cutting Carbon Emissions**

### **What is Resilience?**

The concept of resilience is central to The Transition Handbook. In ecology, the term resilience refers to an ecosystem's ability to roll with external shocks and attempted enforced changes. In the context of cities and towns, it refers to their ability to not collapse at first sight of oil or food shortages, and to their ability to respond with adaptability to disturbance.

Increased resilience and a stronger local economy do not mean that we put a fence up around our towns and cities and refuse to allow anything in or out. It is not a rejection of commerce or somehow a return to a rose-tinted version of some imagined past. What it does mean is being more prepared for a leaner future, more self-restraint, and prioritizing the local over the imported.

### **The three ingredients of a resilient system**

Diversity - a diversity of potential responses to challenges, leading to greater flexibility. Each community will assemble its own solutions, responses and tools. Also lots of small interventions rather than a few large ones.

Modularity - the manner in which the components that make up a system are connected. Globalized

networks allow shock to travel rapidly through the system. A more modular structure means that the parts of a system can more effectively self organize in the event of a shock.

Tightness of Feedbacks - refers to how quickly and strongly the consequences of a change in one part of the system are felt and responded to in other parts. In a globalized system, the feedbacks about the impacts of soil erosion, low pay and pesticide use provide weak feedback signals. Tightening feedback loops bring the consequences of our actions closer to home, rather than being so far from our awareness that they don't even register.

### **Life Before Oil Wasn't All Bad**

It can be instructive to look back into the history of our settlements to see how people employed ingenuity and common sense before cheap fossil fuels enabled us to do without them. People were more skilled and practical, local economies were more diverse and resilient, and people more connected to where their energy and food came from.

#### Not adding resilience

Centralized recycling

Ornamental tree plantings

Sourcing organic food internationally

Imported 'green building' materials

Low-energy buildings

Carbon offsetting

Ethical investing

Buying choral cds

Sky sports

Consumerism

#### Adding Resilience

Local composting

Productive tree plantings

Local procurement specifying local production, supporting emerging and new industries

Specifying local building materials

The local Passivhaus

Local community investment mechanisms

Local currencies

Singing in the local choir

Playing football

Reciprocity

### **The cake analogy**

#### **Echoes of a Resilient Past**

#### **Can We Learn Anything Useful from Britain's Last 'Wartime Mobilization'?**

In the light of the need for broad engagement across sectors in response to a life-threatening situation, we can learn some lessons about how quickly governments can respond (when they have to) by looking at how the British Government prepared for the impacts war would have on food production.

In 1936, two-thirds of Britain's food was imported and much of the nation's productive land was under pasture. By 1944, food production had risen 91%. Food imports to the UK halved between 1939 and 1944. A huge program of promoting the virtues of thrift and economy, as well as teaching practical skills. There was a 95% drop in the use of cars in the UK from 1938 to 1944. Alongside the war effort, building resilience became a national priority, and was actively encouraged and facilitated by national government.

### **Chapter 4: Why Small is Inevitable**

## **Relocalization**

A growing number of writers and thinkers now argue that the decline in availability of liquid fuels and their rising price will inevitably lead to the local scale becoming more important. Writer David Fleming said "...it has the decisive argument in its favour that there will be no alternative."

Hopkins argues that we need to be building the capability to produce locally those things that we can produce locally. We aren't looking to create a 'nothing in, nothing out' economy, but rather to close economic loops where possible and to produce locally what we can.

He provides the example that in Totnes, they asked the Regional Development Agency if they would fund their local food directory; they were told that they couldn't, because under the WTO they were unable to fund anything that promotes the idea that local produce is in any way superior to internationally sourced produce.

Ultimately, as availability of fossil fuels begins to contract so will our ability to move goods around, and inevitably, we will need to start building the infrastructure for local provision. It is not something we have a choice over - it is an emerging reality; a 'when', not an 'if'. We are not talking about complete localisation, but rather about the building of resilience.

Complete reliance on road transport and centralized distribution are economic globalisation's Achilles' heel. Various 'alternative' fuels are proposed, generally by those for whom the 'viable mitigation option' of systematically weaning ourselves off private transport and centralised distribution does not enter the frame; but they fall short when examined critically.

## **Biodiesel Hydrogen**

It is clear that throughout history it made more sense to produce what was possible locally, and to import luxury goods and the few things we were unable to produce ourselves. The key issue here, once again, is resilience. With that resilience in place, if computers and plastic toilet brushes stop coming in, we'll still have sufficient food, shelter, fuel, basic goods and medicines to get by.

Given that our current globalised/centralised supply systems are entirely dependent on cheap liquid fossil fuels, and the uninterrupted supply of those fuels, and the uninterrupted supply of those fuels and their continuing cheapness is increasingly in doubt, we need to refocus on the creation of local production systems.

We cannot go back, nor would we want to. We need not all relearn Morris dancing, deprive women of the vote, or re-embrace feudalism. We can adapt our culture to a more local context with creativity, and the results will be beyond our current imaginings.

This will not be an isolationist process of turning our backs on the global community. Rather it will be one of communities and nations meeting each other not from a place of mutual dependency, but of increased resilience.

## **The Dangers of Clinging to the Illusion of Large-Scale**

Moving towards the kind of low-energy, more localised future outlined in the Transition Handbook is not the only option. Right now there are trends and forces taking us in the opposite direction dismantling resilience via economic globalization. This business as usual approach offers no resilience, places all our eggs in one basket, leaves us at the mercy of international events and economics, perpetuates our collective de-skilling, offers meaningful work to no one, maintains and possibly even increases the oil dependency of agriculture, destroys bio-diversity, does nothing to strengthen economies, fails to make us any healthier, and would be soul-destroying.

## **Top Down or Bottom-up?**

Transition Initiatives will function best in the context of a combination of top-down and bottom-up responses, none of which can address the challenge in isolation. Successful national and international responses are all more likely in an environment where community responses are abundant and vibrant. We can't wait for governments to take the lead.

## **Where does government fit in?**

Governments generally don't lead, they respond. They are reactive, not proactive. It is essential that we remember that many of the decisions they will inevitably have to make as part of preparing for Powerdown are perceived to be pretty much inconceivable from an electoral perspective.

If, through the creation of an Energy Descent Action Plan which has engaged the community and which offers a positive vision of a lower-energy future, communities have set out where they want to go, then a very dynamic interface is created between communities, local and national government. Communities could set the agenda, saying to government, "Here is our plan: it addresses all of the issues raised by the coming challenges of climate change and energy security, and it also will revitalise our local economy and our agricultural hinterland, but it will work far better if carbon rationing is in place, and if the true costs of fossil fuels are reflected in goods and services." The fear of change is removed for government, and they become swept along in a huge movement for change. We have to remember that we can do a huge amount without government, but we can also do a great deal more with them.

## **Summing up Part One: The Oil Age Draws to a Close**

We cannot adequately address the challenge of de-carbonizing our society without also addressing the need to rebuild local resilience, to create local economies capable of supporting us in a post-peak world. Just cutting carbon emissions, although deeply urgent, is not enough on its own. We need stronger local economies, increased local democracy, strengthened local food culture and more local energy provision.

The key message is that the future with less oil could be better than the present, but only if we engage in designing this transition with sufficient creativity and imagination. We need to draw together a diversity of individuals and organisations that has seldom been managed in the past. We need to employ that same adaptability, creativity and ingenuity that got us up to the top of the peak in the first place to design a way down the other side. The question now is how can we overcome the obstacles to this Transition that we encounter, both within ourselves and in the wider world?