



Climate Change

Climate change refers to long term variations in Earth's climate. Recently however, this phrase has come to mean changes in Earth's climate caused by human activity. In this sense "Climate Change" is synonymous with "Global Warming", which refers to the increase in global average air and ocean temperatures since the human industrial era began.

According to the Intergovernmental Panel on Climate Change (IPCC) the most likely cause of climate change or global warming is the increase in human produced greenhouse gases.

The main greenhouse gases are water vapour, carbon dioxide, methane and nitrous oxides. Of these the predominant greenhouse gas after water vapour is carbon dioxide.

While natural sources of carbon dioxide are very much greater than carbon dioxide produced by human activity, they have in the past been

closely balanced by natural absorption mainly by plants and marine plankton.

Additional carbon dioxide produced by human activity together with large scale deforestation has upset this balance and resulted in increased carbon dioxide levels in the atmosphere. Levels of carbon dioxide in the atmosphere are now approximately 40% higher than they were before the industrial era, and the rate of change appears to be increasing.

Greenhouse gases are produced by human activities, including:

- Burning fossil fuels, such as coal, oil or natural gas.
- Some aspects of farming such as raising cattle and sheep, using fertilisers and growing some crops.
- Land clearing and logging.
- The breakdown of food and plant wastes and sewerage.
- Some industrial processes, such as making cement and aluminium.

Peak Oil

Earth's oil supply is finite and will in theory eventually be exhausted. In practice, oil extraction will become increasingly expensive to the point where oil become uneconomic for most existing uses.

"Peak Oil" is the point in time when the maximum rate of global crude oil production is reached, after which the rate of production will fall. The estimation of when Peak Oil occurs is based on the measured fall in production rates of individual oil wells and oil fields, together with the rate of discovery and commercialisation of new fields.

Predictions of when "Peak Oil" production will occur vary greatly, with some sources claiming it has already occurred, others believing it is about to occur and others again believing that it will not occur until 2020 or later. The International Energy Agency (IEA) believes production of conventional crude oil peaked in 2006.

Beginning with the Industrial Revolution, widespread availability and use of fossil fuels has made possible tremendous economic growth and increased prosperity. The ready supply of cheap fossil fuels during this period has allowed humans to consume energy at a greater rate than it is being replaced.



Following the advent of Peak Oil, increased cost and reduced availability of oil could impact severely on our modern technological society. The severity of this impact will depend heavily on the rate of decline in oil production and development and adoption of effective alternatives.

Some believe these alternatives need to be found at least ten to twenty years before the peak, allowing time for a gradual phasing out of the use of oil.

Such alternatives could include energy conservation, fuel substitution, and use of unconventional oil such as shale oil and oil extracted from tar sands.

Failure to find and adopt alternatives will mean the cost of transport and products produced with oil such as fertilizers, detergents, solvents, adhesives, and most plastics will increase dramatically, and will continue to increase.

Introducing the Transition Towns

Initiative



Think Globally,
Act Locally

***"Communities
responding positively to
the challenges
and opportunities of Peak
Oil and Climate Change"***

The Transition Towns Initiative

"Think Globally—Act Locally"



The Transition Towns Initiative is a global project which aims to help communities meet the emerging challenges of climate change and peak oil.

Since the global financial crisis in 2008, some transition groups have included global financial instability as an additional challenge to be met.

The aim of the initiative is to raise awareness of sustainable living and to build local economic and ecological resilience within the community in an agreed time frame.

Communities participating in this initiative develop "Energy Descent Action Plans" wherein they explore methods for reducing energy usage as well as reducing reliance on long supply chains for essential items such as food.

These long supply chains are invariably dependent on fossil fuels.

Initiatives so far include creating community food gardens; business waste exchange, which seeks to match the waste of one industry with the needs of another; and even simply repairing old items rather than throwing them away.

Some transition towns have also introduced local currencies in order to boost the local economy. These currencies can be used only to purchase local goods and services. Examples include the Totnes pound, the Lewes pound, The Stroud pound, the Brixton pound in London and the Baroon Dollar in Maleny, Australia.

Transition initiatives have been established in many countries and are present in all Australian states.

Setting up a Transition Initiative

Set up a steering group. Establish a core team to drive the project forward during the initial phases.

Raise awareness. Films, events & talks can alert the community to the potential effects of both Peak Oil & Climate Change.

Lay the foundations. Build connections to existing complementary initiatives and network with existing groups.

Organise a grand launch. A memorable event that announces your Transition Initiative to the entire community.

Form working groups. Set up groups to focus on all key aspects of local life, tapping into the collective genius of the community, such as energy, food, building, transport, business, education, health, psychology, waste, local government.

Facilitate the great re-skilling. The Transition initiative can reverse the "great deskillings" of the last 40 years by offering training in the vast range of lost practical skills—repairing, construction, growing, local economics etc.

Build a bridge to local government. When the time is right, get your local council on board and they'll provide significant support.

Honour the elders. Crucially, these may be the only people in your community who know what a lower energy life is like.

Create an Energy Descent Action Plan. Each working group will have been focusing on practical actions to increase community resilience and reduce the carbon footprint.

Energy Descent Action Plans

A key concept within transition is the idea of a community visioned, community designed and community implemented plan to pro-actively transition the community away from fossil fuels. The term "Community" in this context includes all the key players—local people, local institutions, local agencies and the local council.

Publications

Transition Initiatives Primer—becoming a Transition Town, City, District, Village, Community or even island — by Ben Brangwyn and Rob Hopkins

The Transition Handbook: from oil dependency to local resilience — by Rob Hopkins

The Transition Timeline: for a local, resilient future — by Shaun Chamberlin

Local Food: how to make it happen in your community — by Tamzin Pinkerton and Rob Hopkins

Local Money: how to make it happen in your community — by Peter North

Local Sustainable Homes: how to make them happen in your community — by Chris Bird

Local Communities and Local Councils: working together to make things happen — by Alexis Rowell

Climate Change 2007: Synthesis Report. IPCC's Fourth Assessment RReport (AR4). IPCC, Valencia, Spain.

Peaking of World Oil Production: Impacts, Mitigation, & Risk Management — by Hirsch, Bezdek & Wending

World Energy Outlook 2010 — International Energy Agency

Further Information

www.hopeaustralia.org.au

robhopkins.net

www.transitionnetwork.org

transitiontownsaustralia.blogspot.com

www.ipcc.ch

www.iea.org

www.dccew.gov.au/climate-change



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