



## Why Energy Descent?

The Transition Movement worldwide has chosen to focus on the concept of *energy descent*—the long-term decline of our total energy supply—as a central element in planning for local resilience and sustainability. Given the continuing availability of oil, gas and coal resources, as well as the great upwelling of alternative energy sources such as wind, solar, and biofuels, this emphasis may seem surprising. Yet, energy descent is an inevitable part of our future, one that cities like Seattle, San Francisco, Portland, and Oakland have begun to take seriously in their future planning.

What follows is a short list of facts and ideas behind this important concept. For sources and more information, please contact Transition Santa Cruz.

- Historically, the oil *production* in any region has peaked about 40 years after the peak of *discoveries*. World oil discoveries peaked in the early 1960's. Despite high demand, oil production has not increased since 2005. It is likely we are at the start of a permanent decline of oil supply now.
- Each billion barrels discovered delays the peaking and decline of oil production (a.k.a., *peak oil*) by less than a week. Also, large oil discoveries now are hard-to-get, expensive oil, such as deep-sea, shale, tar sands, or in regions controlled by hostile governments.
- By 2040, oil producing countries are expected to need all their oil for their growing economies, and may no longer willingly export oil.
- Other forms of energy don't yield nearly as much *net* energy and are generally not scalable to the amounts of energy we are used to with fossil fuels.
- We may be able to reduce our energy use via efficiency and conservation by 15% without much cost to the economy and our lifestyles. But oil production will likely decline at 5% every year in the coming years. We will use up our efficiency and conservation gains in just 3 years.
- The world uses about a cubic mile of oil a year. To replace that capacity, we would need to build 52 nuclear power plants or 104 coal-fired ones, every year for 50 years.
- Solar and wind provide less than 1% of our energy. It will take much time and energy to scale this up dramatically, and with rising energy costs affecting the entire economy, it is questionable that there will ever be enough investment capital to scale them remotely close to our current energy use.
- According to the Hirsch Report (US Dept. of Energy, 2005), we would have needed 10 to 20 pre-peak years to prepare for the effects of peak oil in order to avoid major disruption of our economy as a result. Developing new technologies and replacing infrastructure takes a lot of time and investment.

There is also a silver lining to the necessity of energy descent:

- Planning well for energy descent will address a host of environmental problems, including climate change.
- Relocalization, one of the chief strategies for energy descent, offers a striking opportunity for the creation of more desirable and equitable local communities.