

# La tragédie de l'énergie en 3D

## *The Energy Tragedy in 3D*



**momentum**  
l'anthropocène et ses issues **INSTITUT**

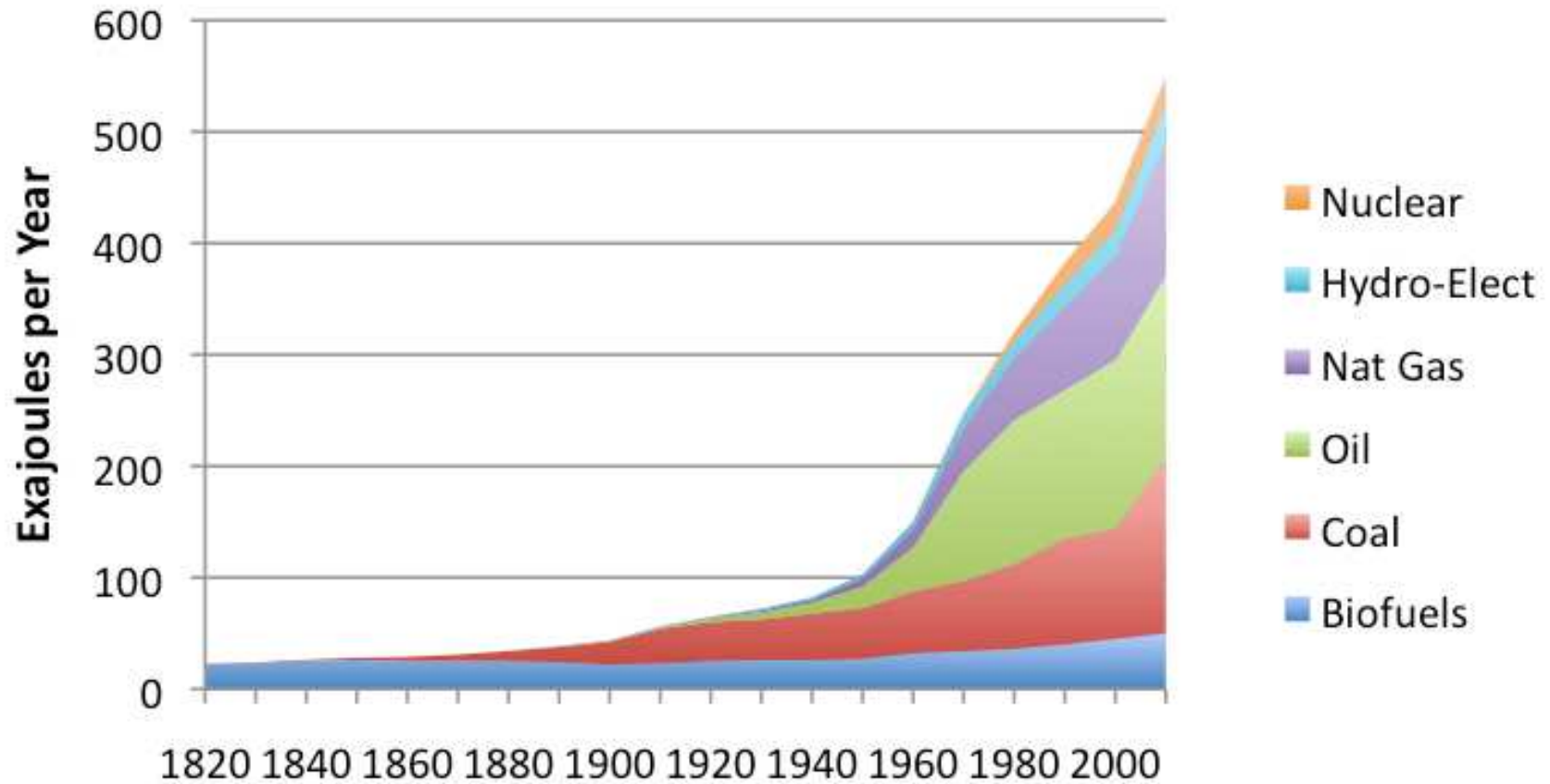
**Agnès Sinai**

Thursday 15 November 2012  
European Parliament

# Démesure thermo-industrielle

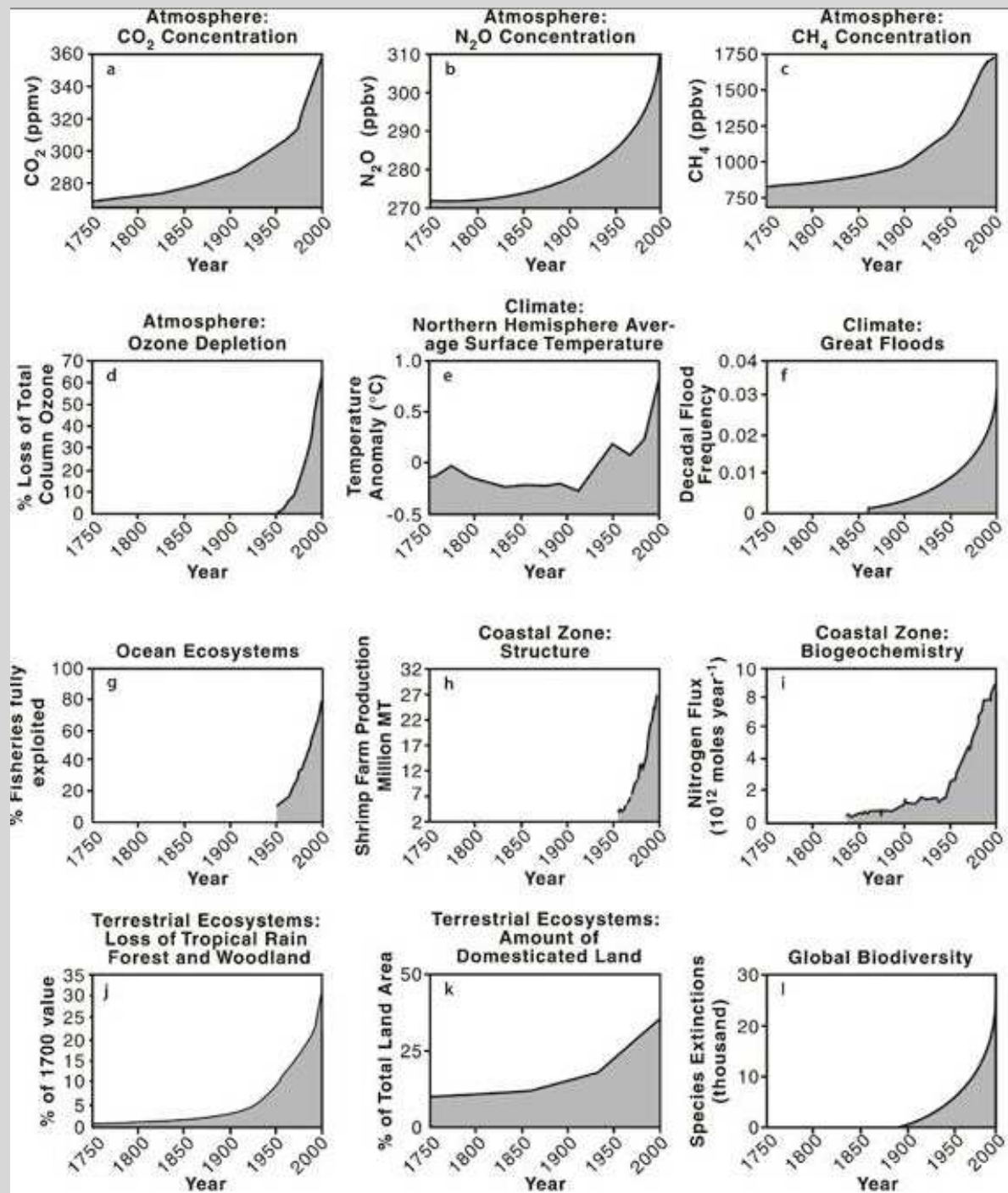


# World Energy Consumption



Source : Vaclav Smil & BP Statistical Data

# ACCELERATION, OVERSHOOT



Source :  
New Scientist, 15 octobre 2008

# L'Anthropocène

## Une ère d'accélération



**Anthropocène** : terme lancé en 2000 par  
**Paul Crutzen**, chimiste néerlandais,  
prix Nobel (1995).

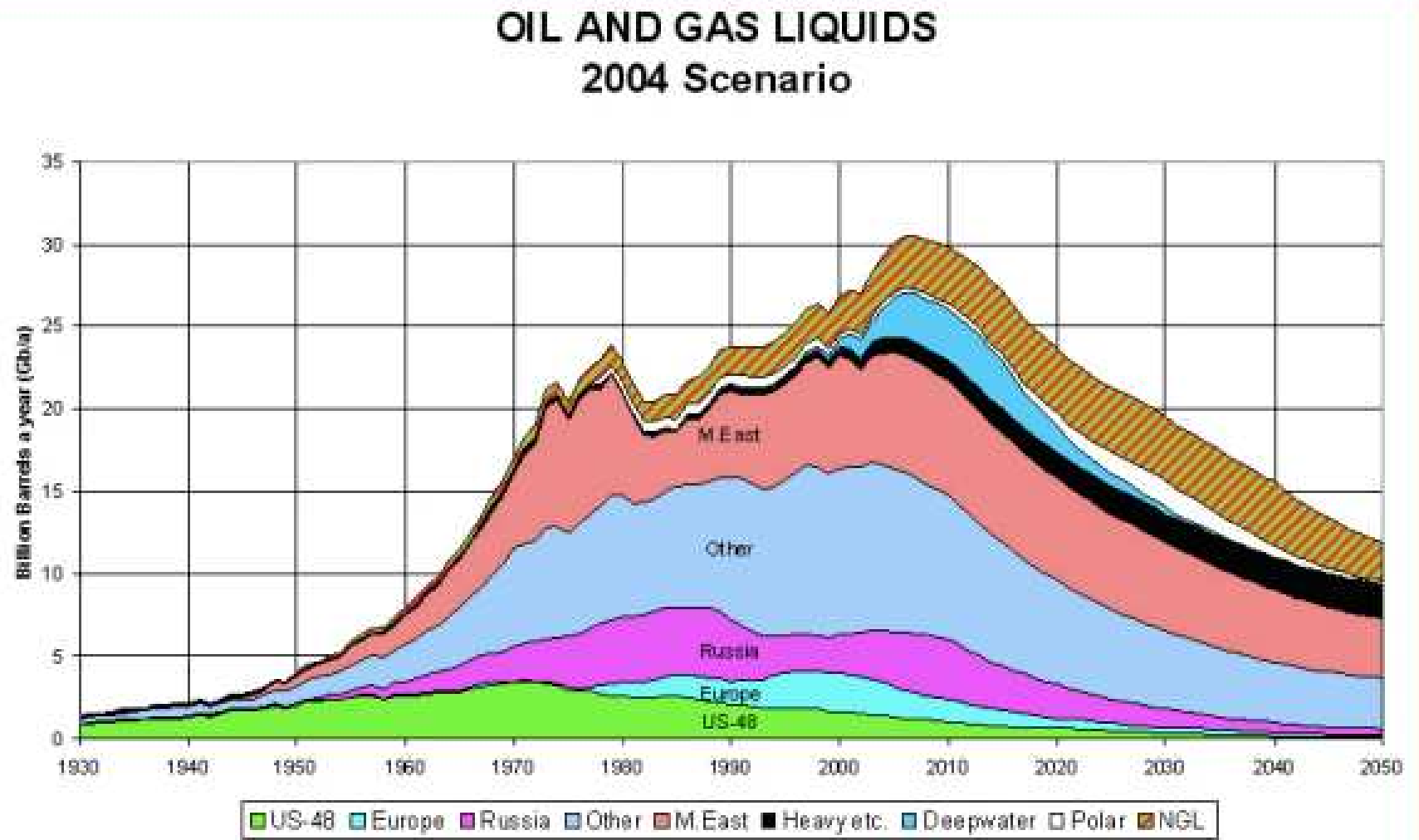
**Nouvelle ère** marquée par  
l'impact de la croissance  
industrielle et démographique.

« **Geology of Mankind** »,  
*Nature*, 2002.

Se distingue de la stabilité de  
l'**Holocène**, époque  
des 11 000 dernières années.



Une parenthèse va se refermer...



Source : Colin Campbell, 2004.

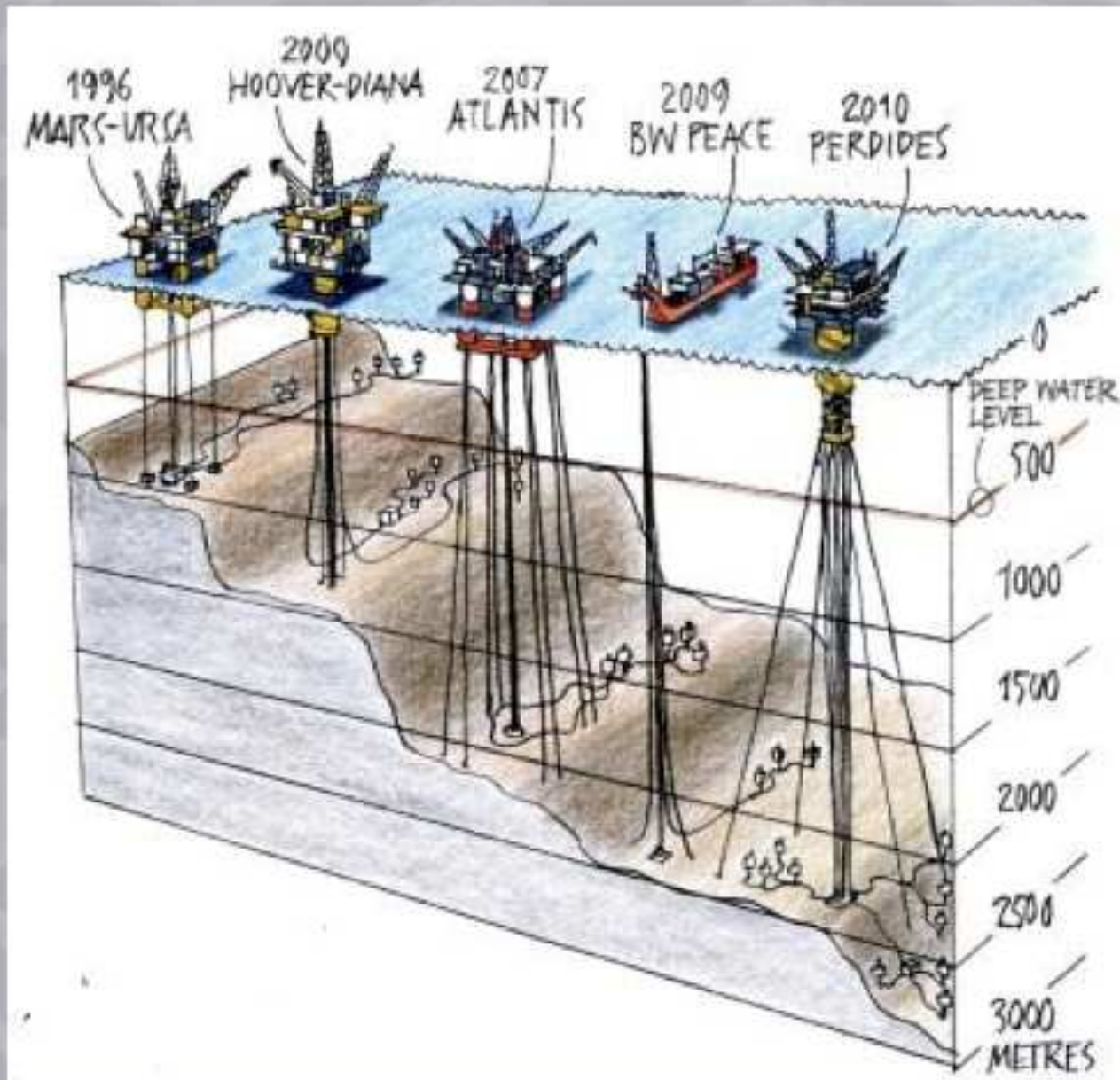
# Dilemme de l'énergie :

« We have lived in a time of surplus energy, and so we do not realize how unusual our time is. » (Joseph Tainter).

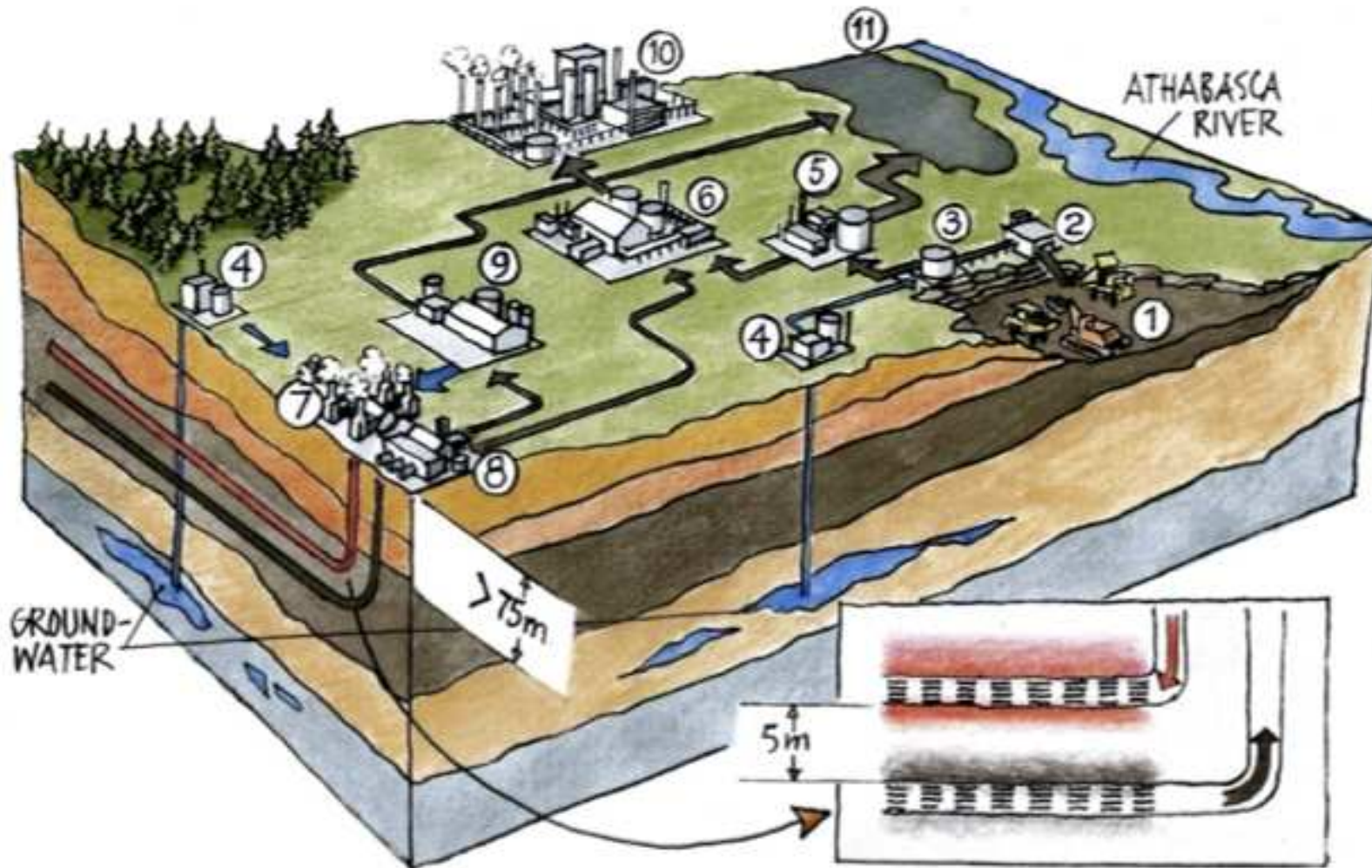




# Deep water and deeper



# Oil sand production



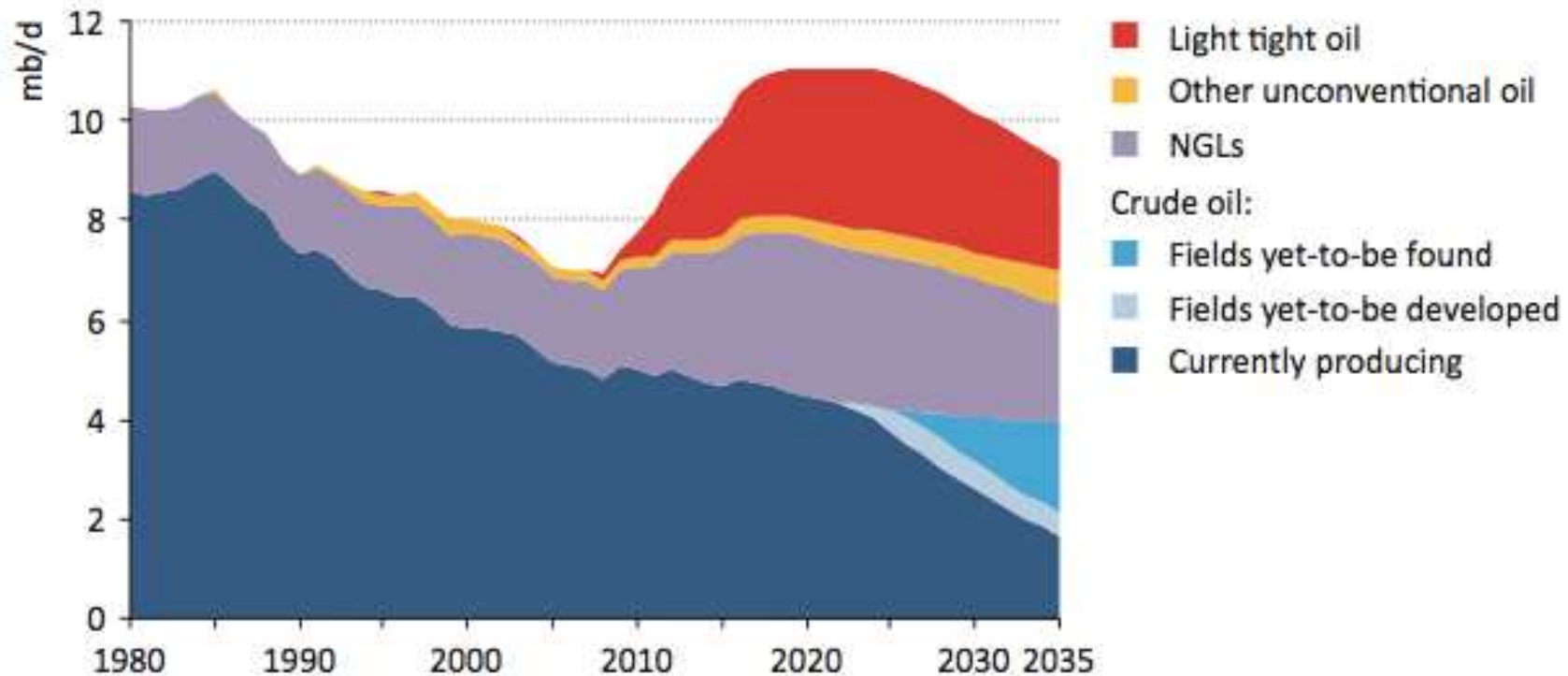
EOR : ENHANCED OIL RECOVERY



# Désinhibition

« It is usually not possible for a society to reduce its consumption voluntary on the long run » (Tainter).

**Figure 3.18** ▷ United States oil production by type in the New Policies Scenario



Note: The World Energy Model supply model starts producing yet-to-find oil after it has put all yet-to-develop fields into production. In reality, some yet-to-find fields would start production earlier than shown in the figure.

# Dissonance

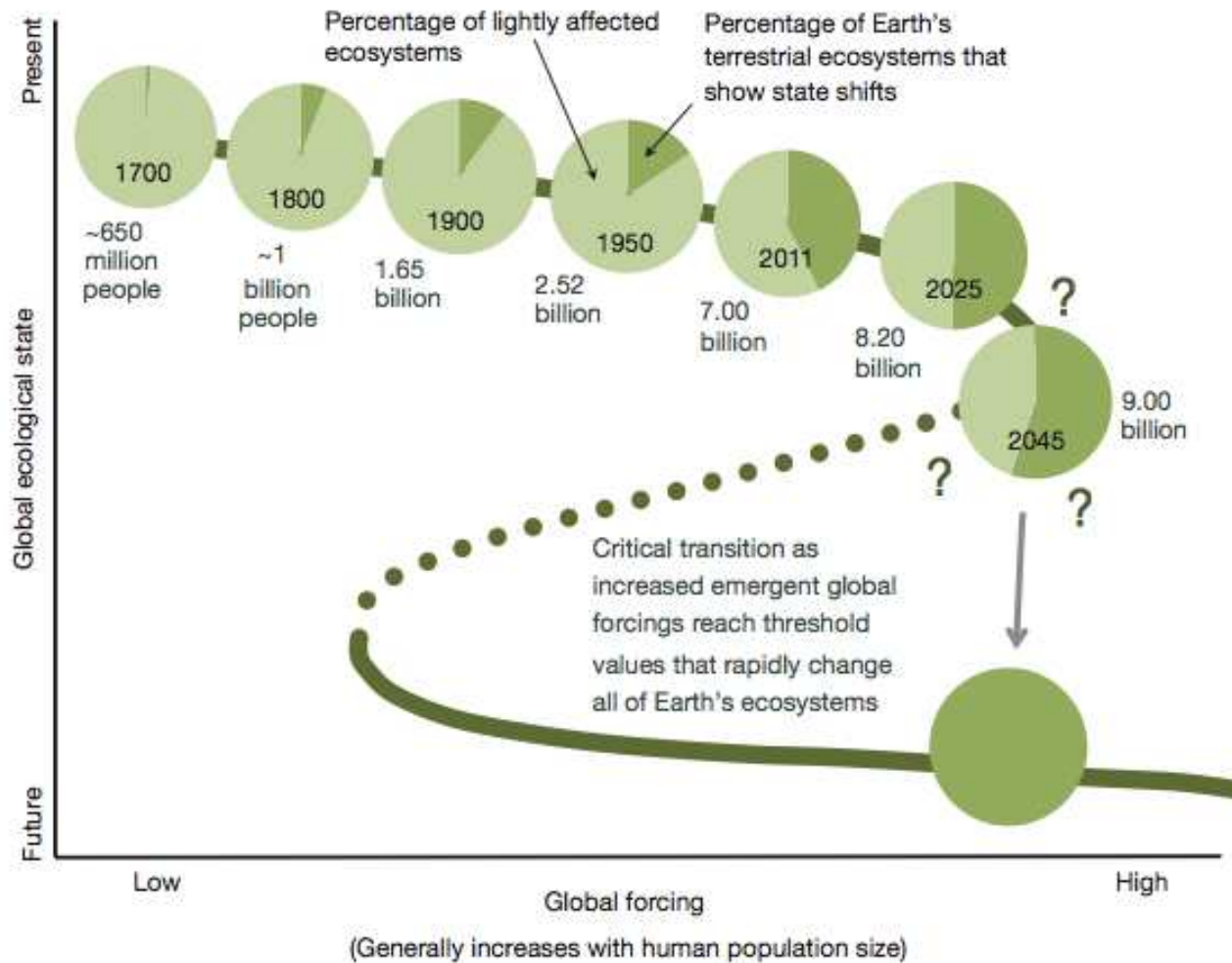


Audi Etron



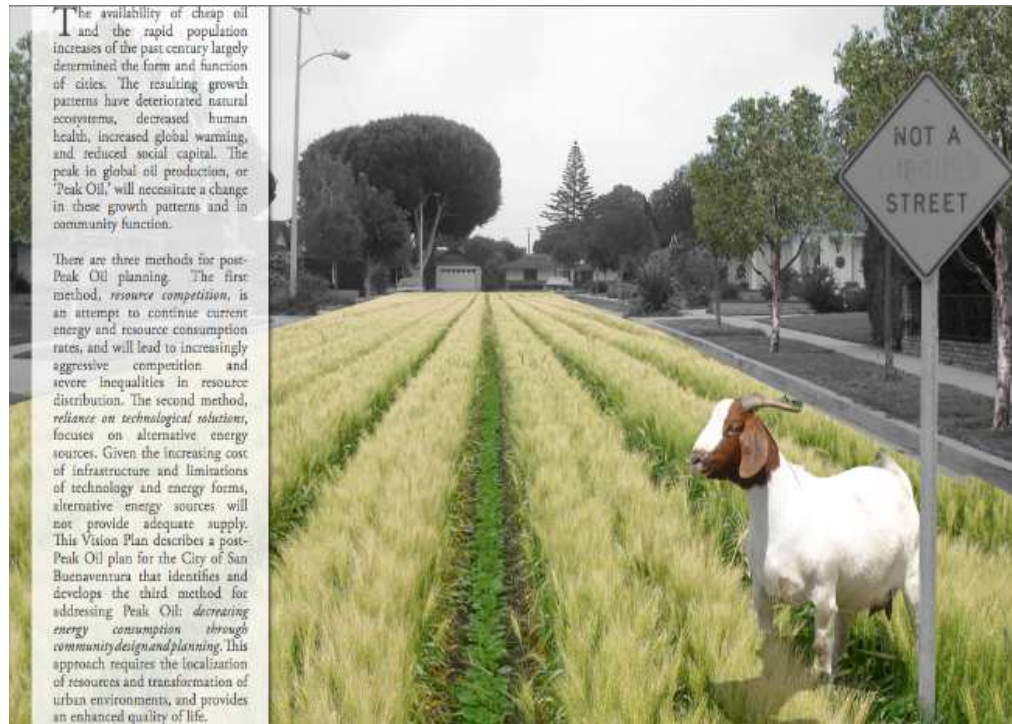
Peugeot BB1 electric

# Déviatión ?



Barnosky et alii, *Nature*, 7 juin 2012.

# Descente énergétique, plus ou moins créative



The availability of cheap oil and the rapid population increases of the past century largely determined the form and function of cities. The resulting growth patterns have deteriorated natural ecosystems, decreased human health, increased global warming, and reduced social capital. The peak in global oil production, or 'Peak Oil,' will necessitate a change in these growth patterns and in community function.

There are three methods for post-Peak Oil planning. The first method, *resource competition*, is an attempt to continue current energy and resource consumption rates, and will lead to increasingly aggressive competition and severe inequalities in resource distribution. The second method, *reliance on technological solutions*, focuses on alternative energy sources. Given the increasing cost of infrastructure and limitations of technology and energy forms, alternative energy sources will not provide adequate supply. This Vision Plan describes a post-Peak Oil plan for the City of San Buenaventura that identifies and develops the third method for addressing Peak Oil: *decreasing energy consumption through community design and planning*. This approach requires the localization of resources and transformation of urban environments, and provides an enhanced quality of life.