The dilemmas that won't go away: unbounded consumption and growth

Introduction

Hal Wilhite, University of Oslo

Keynote

Anders Wijkman, Senior Advisor, Stockholm Environment Insitute, former MEP, author of 'The big denial'

An outline of the dilemma(s)

(1) From a climate/biosystem perspective, we need a radical reduction of resource consumption and global climate emissions.

(2) Emerging and developing countries will need to increase consumption and emissions in order to provide basic energy services (health, education, business).

(3) This increases the urgency for rich OECD countries to drastically reduce energy use and carbon emissions.

(4) Renewable energies and carbon capture will take a small share of emission reductions, but will only take a sliver off of the projected global increases in emission.

(5) Therefore, energy consumption will need to be significantly reduced in rich countries over the coming century.

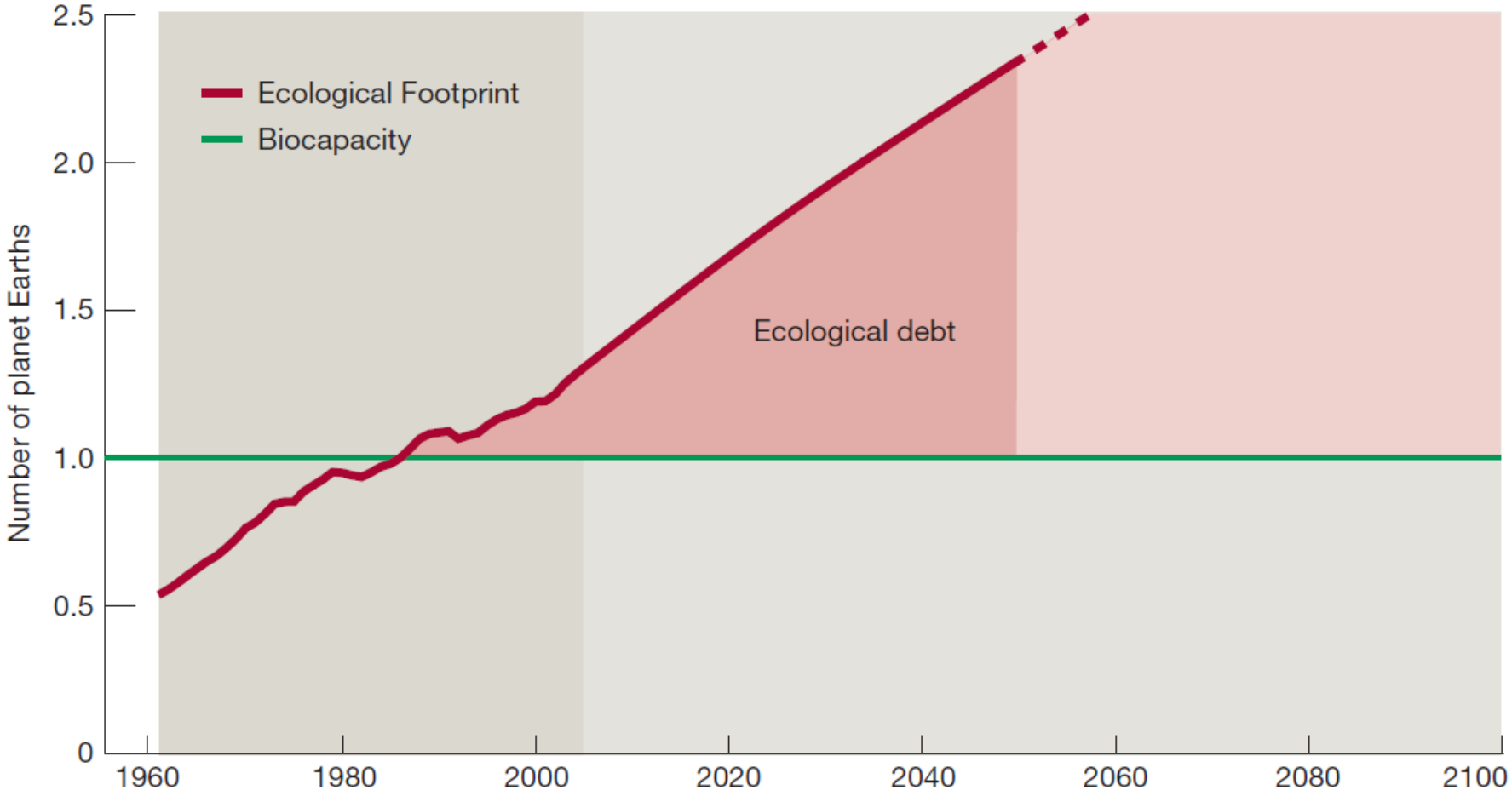
Is this possible in an unbounded economy which positively values unbounded consumption?

"Global resource consumption is exploding. It's not a trend that is in any way sustainable“

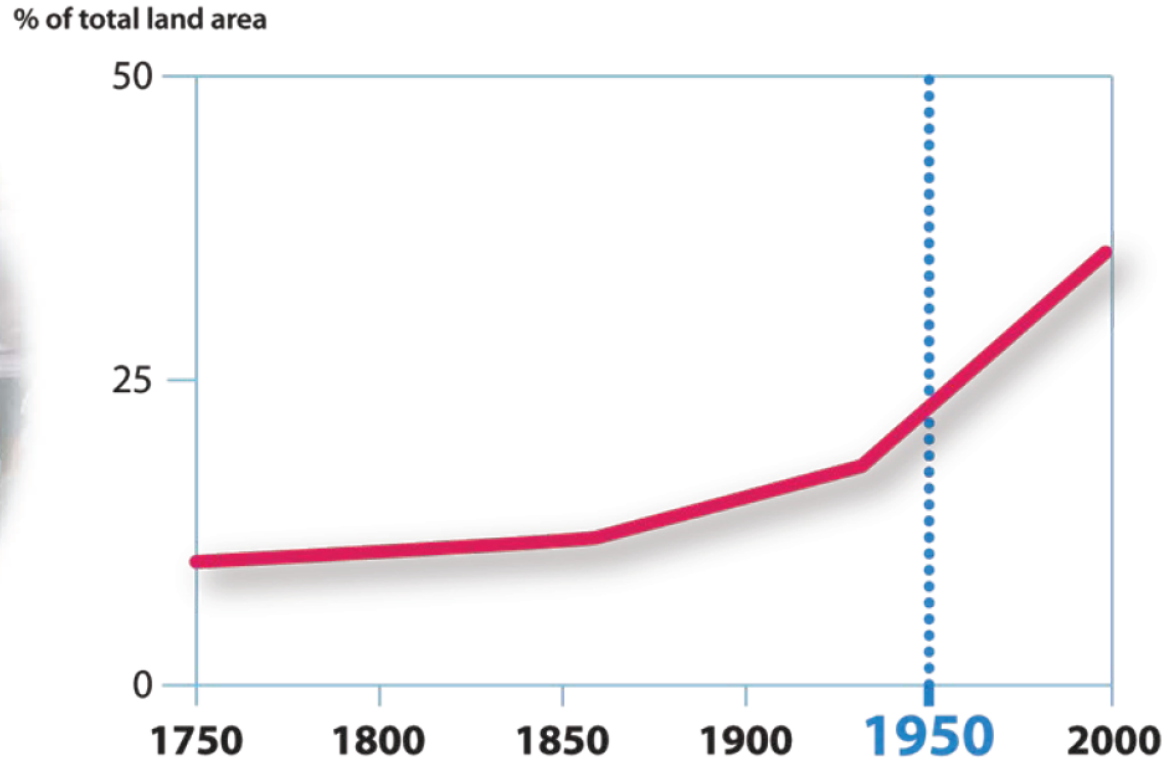
Ernst von Weizsacker, co-chair of the UNEP resource panel and ECEEE patron (from a recent UNEP report).

Source: WWF

Fig. 31: **BUSINESS-AS-USUAL SCENARIO AND ECOLOGICAL DEBT**



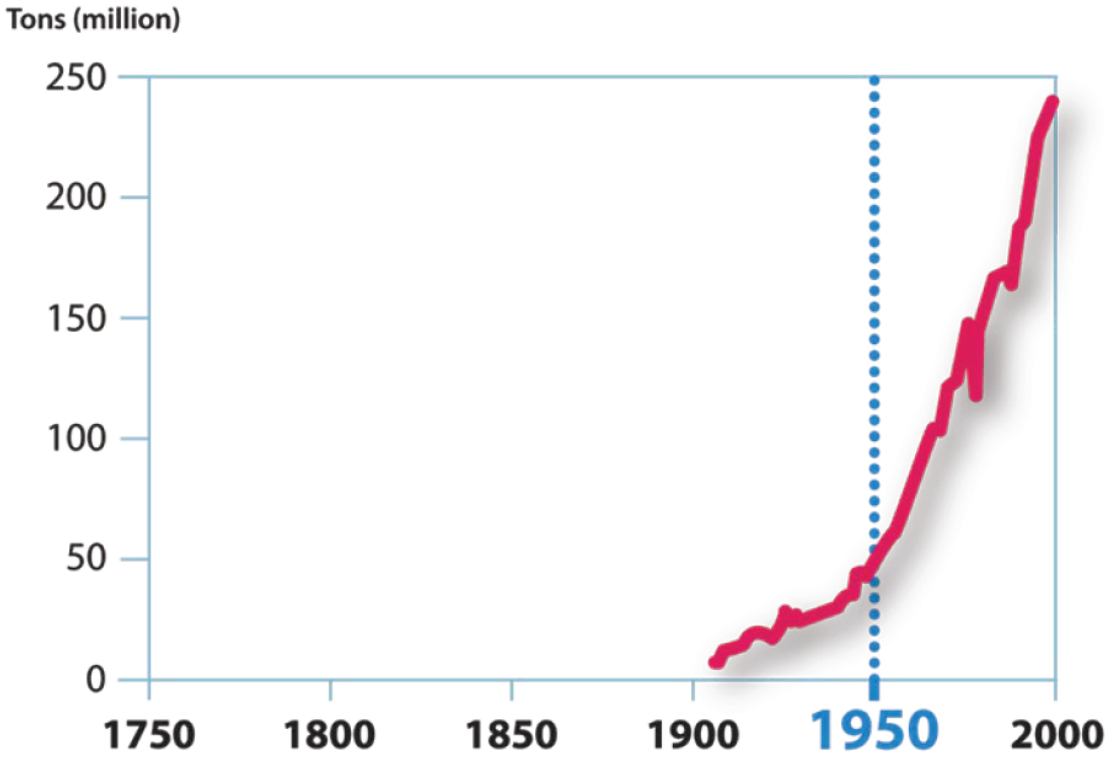
Domesticated land



IGBP synthesis: Global Change and the Earth System, Steffen et al 2004

Sybil Seitzinger, IGBP

Paper consumption

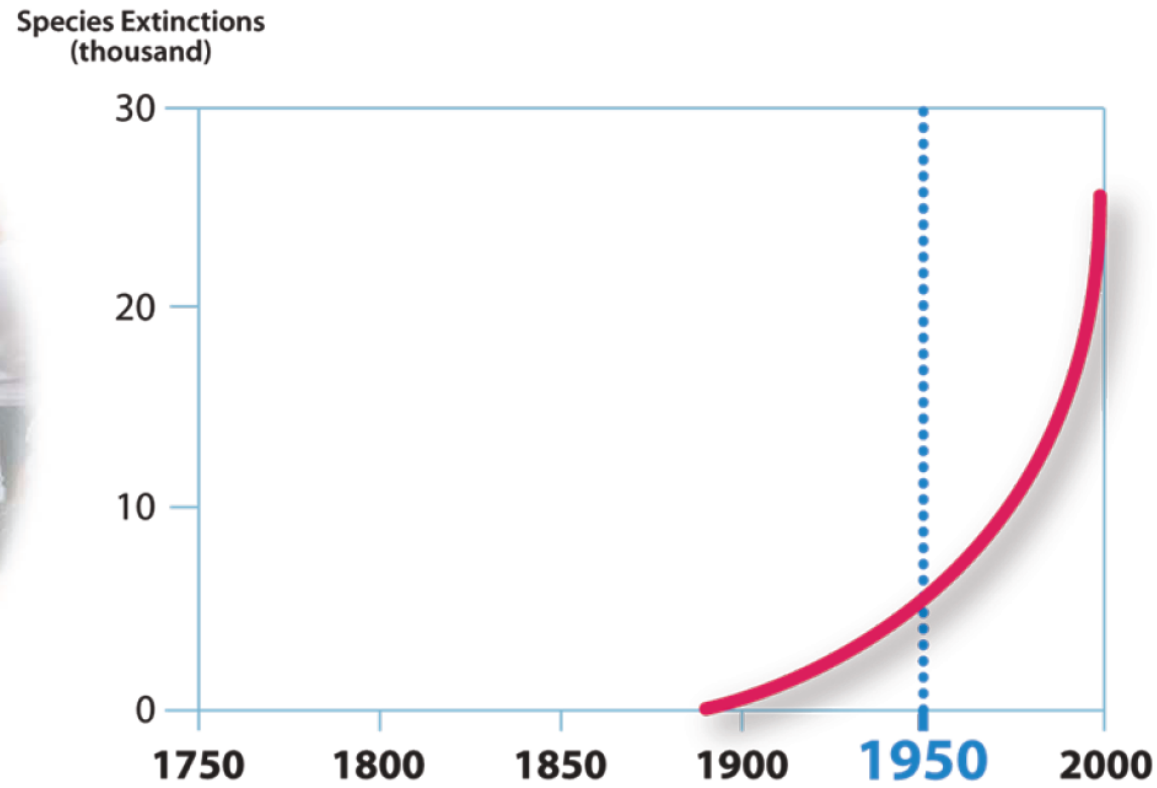


Pulp and paper international (1993)

IGBP synthesis: Global Change and the Earth System, Steffen et al 2004

Sybil Seitzinger, IGBP

Biodiversity loss



IGBP synthesis: Global Change and the Earth System, Steffen et al 2004

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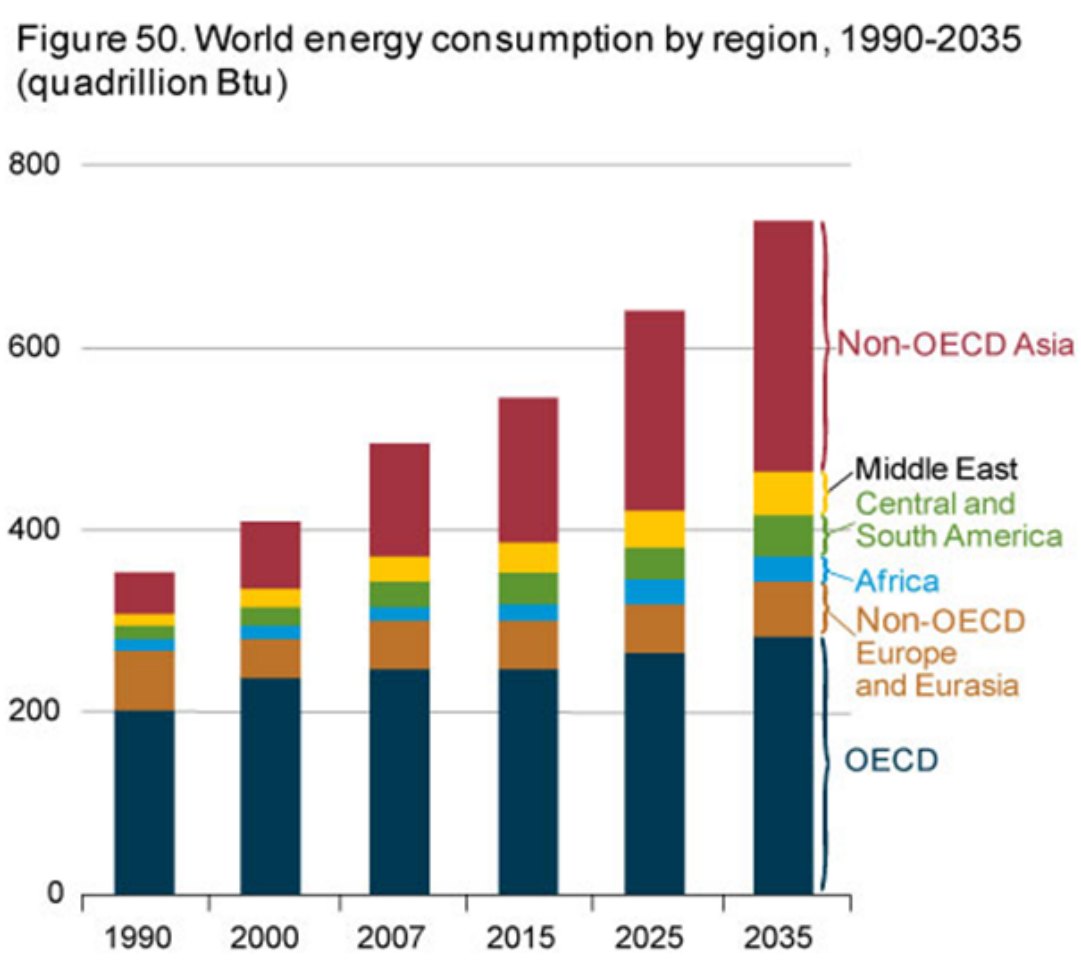
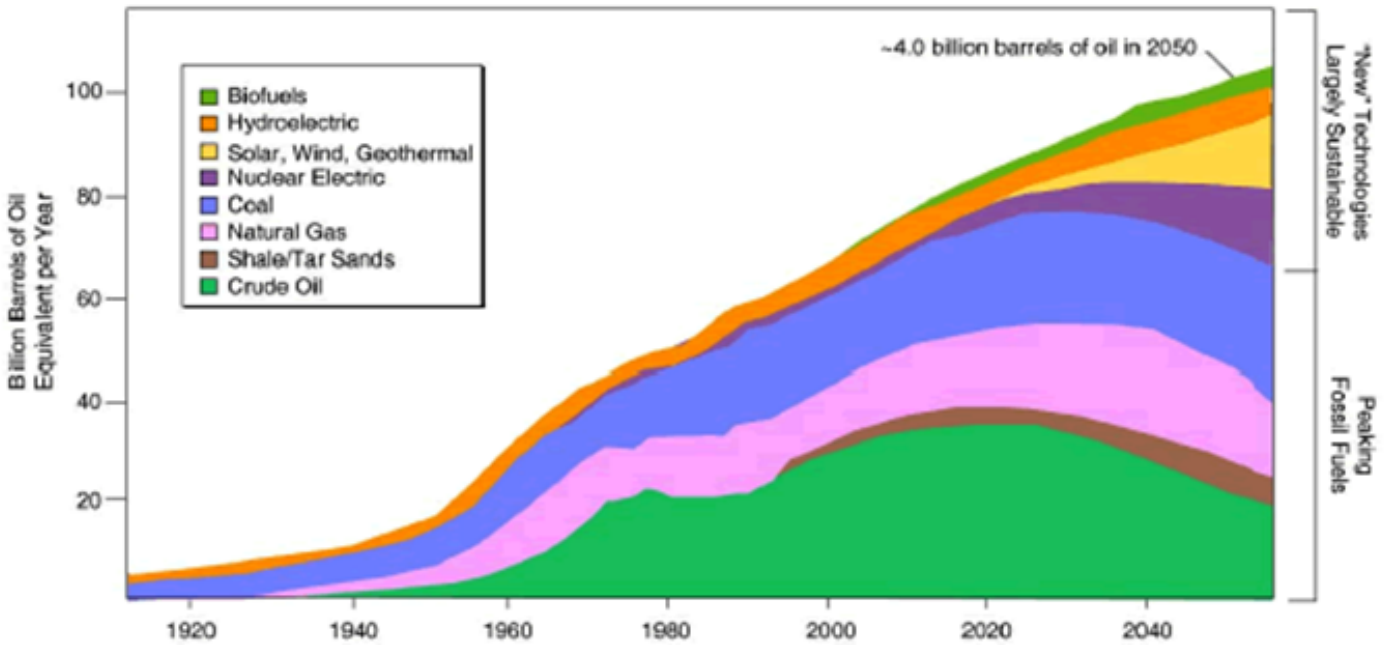
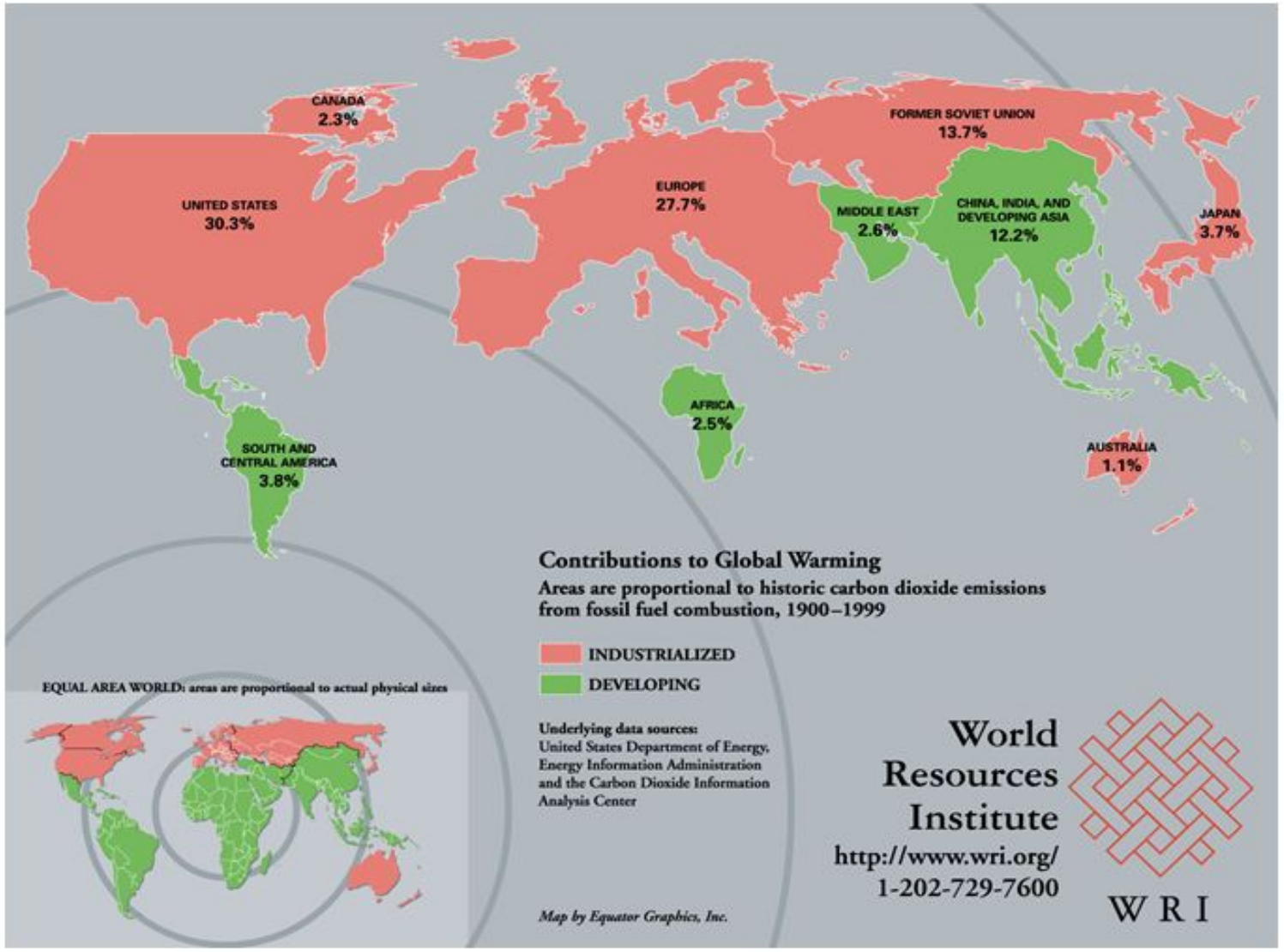
US EIA Outlook 2011



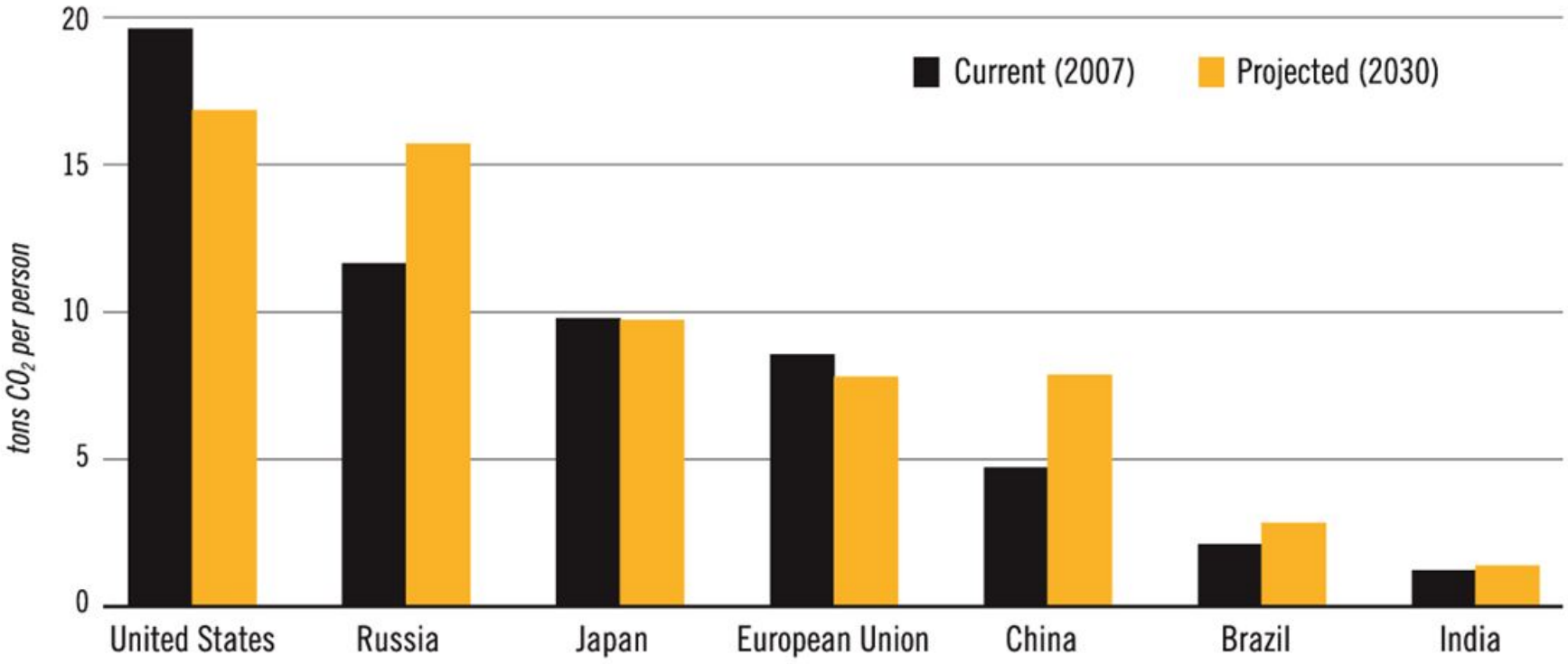
World Energy Demand—Long-Term Energy Sources



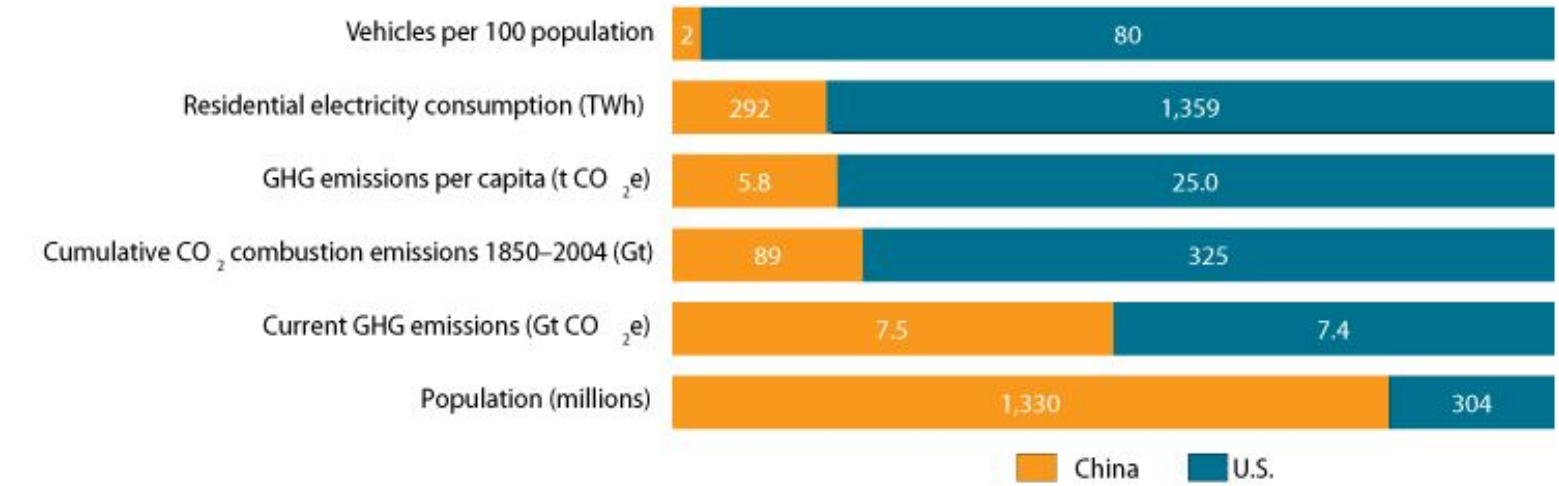
Sources: Lynn Orr, *Changing the World's Energy Systems*, Stanford University Global Climate & Energy Project (after John Edwards, American Association of Petroleum Geologists); SRI Consulting.


CANADA
2.3%
UNITED STATES
30.3%
EUROPE
27.7%
FORMER SOVIET UNION
13.7%
MIDDLE EAST
2.6%
CHINA, INDIA, AND
DEVELOPING ASIA
12.2%
JAPAN
3.7%
AFRICA
2.5%
SOUTH AND
CENTRAL AMERICA
3.8%
AUSTRALIA
1.1%
Contributions to Global Warming
Areas are proportional to historic carbon dioxide emissions
from fossil fuel combustion, 1900–1999
INDUSTRIALIZED
DEVELOPING
EQUAL AREA WORLD: areas are proportional to actual physical sizes
Underlying data sources:
United States Department of Energy,
Energy Information Administration
and the Carbon Dioxide Information
Analysis Center
Map by Equator Graphics, Inc.
World
Resources
Institute
http://www.wri.org/
1-202-729-7600
WRI

Per capita emissions, current and projected



Comparison of Chinese and U.S. Energy Statistics



Source: Data Sources: CIA Factbook, IEA CO_2 Emissions Report, WRI CAIT, IEA World Energy Statistics, http://www1.eere.energy.gov/vehiclesandfuels/facts/2007_fcvt_fotw474.html

Energy consumption

Energy consumption for a given service (transport, space cooling, refrigeration, lighting) is determined by

1) the size and numbers of things involved in the practice
2) their energy efficiencies
3) the efficacy of their management by the consumer

The consumption-reduction report card

We have done well on the second, increasing technology efficiency (B), and are making progress on the third, increasing user awareness and better management of home energy systems (C).

But we are failing on the first: promoting reduced volume and material throughput (F)

Research and policy imperatives

- Need to reframe energy policy such that it aims at reducing the volume of energy consumption
- This calls for a more robust theory of energy consumption which accounts for social contexts, the architecture of choice, the power of routines and habits, the inertia of the material environment.

The economy problem

It is it feasable to bound consumption, resource depletion and climate emissions in an unbounded economic system?

If not, how do we rethink economy such that it is less environmentally intrusive yet supports and maintains well being and life quality?