The Centre for Sustainable Transportation
Le Centre pour un transport durable

What Sustainable Transportation will mean for Conservation Authorities

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Outline of this presentation

- Define sustainable transportation
- Why reach for sustainability
- The key role of energy in our transport future
- Paths to sustainability
- Implications for conservation authorities

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The Centre's definition (and that of the EU)

A sustainable transportation system is one that:

- Allows the basic access needs of individuals to be met safely and in a manner consistent with human and ecosystem health, and with equity within and between generations.
- Is affordable, operates efficiently, offers choice of transport mode, and supports a vibrant economy.
- Limits emissions and waste within the planet's ability to absorb them, minimizes consumption of non-renewable resources, limits consumption of renewable resources to the sustainable yield level, reuses and recycles its components, and minimizes the use of land and the production of noise.

Why reach for sustainability

- Protect the environment: Outputs of sustainable systems are low enough to be accommodated by natural processes. There is no cumulative impact.

- Conserve resources: Inputs of sustainable systems are replaced by natural processes at about the same rate as they are used. They are renewable.

- Provide intergenerational equity: Present needs are met without compromising the ability of subsequent generations to meet their needs. They are not left with a burden of pollution or altered natural systems, or with depleted resources.

The key role of energy 1

- Sustainable energy forms include biofuels, if their input requires less energy that they yield, and hydrogen and electricity, if produced from renewables.

- Challenges for biofuels include land take and energy balance.

- Challenges for hydrogen are (i) no affordable, mass-production system for fuel cells; (iii) insufficient natural gas; (iii) energy losses in electrolysis and fuel cell re-conversion.

- Challenges for electricity are: (i) batteries' poor energy density; (ii) inflexibility of tethered vehicles.

The key role of energy 2

- Nevertheless, tethered vehicles are likely to prevail in an energy-constrained world.
- They provide the lowest energy losses and require the lowest land take.

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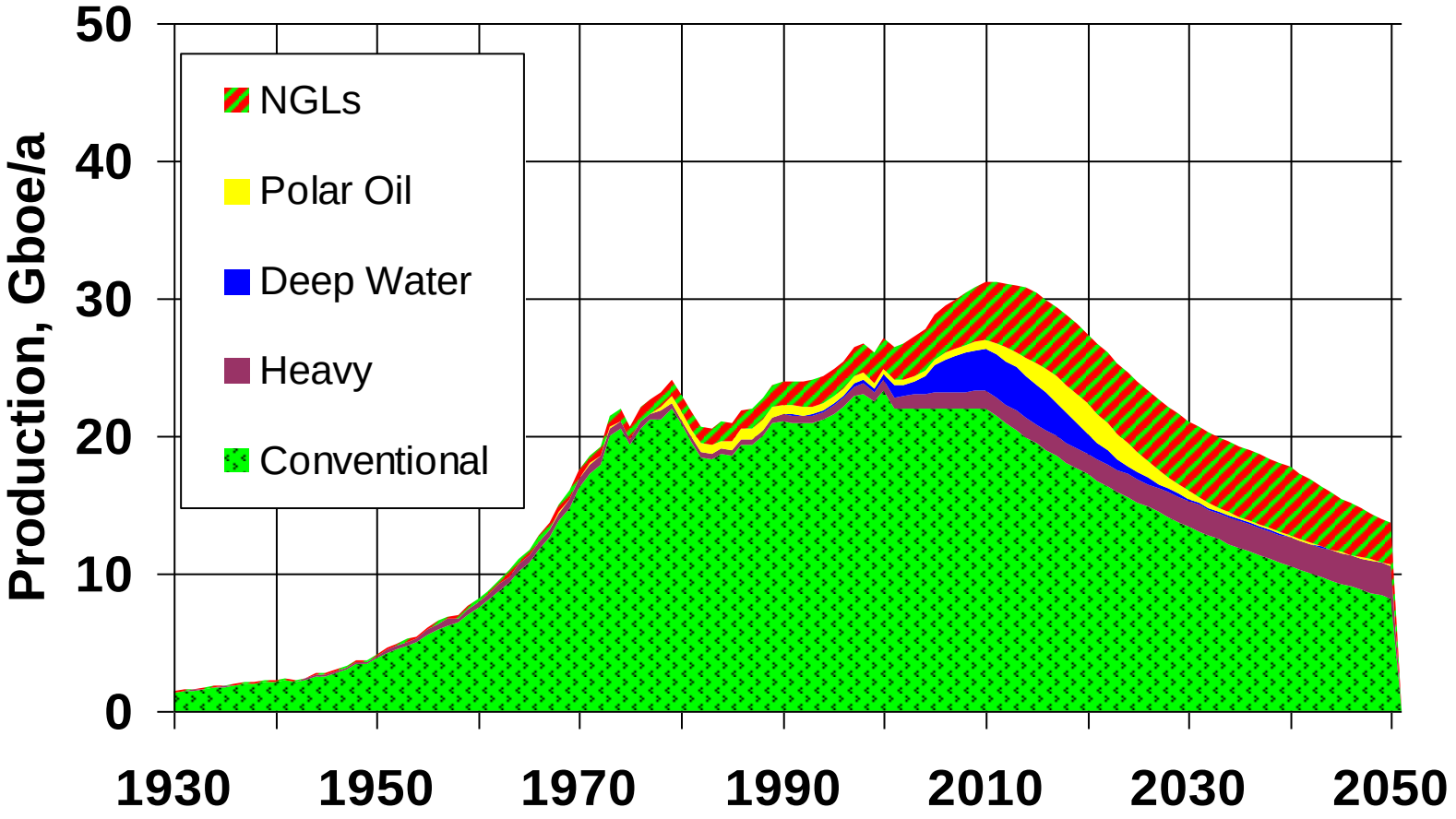
The key role of energy 3

Actual and projected world production of petroleum liquids, 1930-2050



"Gboe/a" = billions of barrels of oil equivalent per year. The chart sets out the most credible of several scenarios of peak oil production.

Source: Oil Depletion Analysis Centre, London, UK (2002)

Paths to sustainability

- Wait for oil peak and consequent high prices to force change. (Refuge of policy-advisers and -makers who feel that nothing else will work?)
- Pin hopes on hydrogen. (In spite of the huge challenges and costs, because it could allow continuation of private cars.)
- Plan for energy-constrained world. (The responsible course, but very hard to do because there is no evident need for it and people do not want it.)

Implications for conservation authorities

- Visitor revenue, a substantial part of authorities' income, is as car-dependent as the visitors.
- In the likely—but not certain—future, people will be able to visit conservation areas only by public transport, probably involving tethered vehicles.
- The need to visit will be a strong as ever, if not stronger. It will be met by competitors if there is no transit to conservation areas.
- Solutions: (i) Plan for energy-constrained world. (ii) Build attendance by transit. (iii) Invest, if possible in tethered transit, including PRT.