IEA Committee on Energy Research and Technology
EXPERTS' GROUP ON R&D PRIORITY-SETTING AND EVALUATION

Blue sky research for energy technology

The role of blue sky research and innovation in addressing energy challenges

An event organised under the auspices of the

Experts' Group on R&D Priority Setting and Evaluation (EGRD)

14-15 June 2017

Hosted by the University of Birmingham
Muirhead Tower, University Ring Road North, 12th floor

iea Energy Technology Network
Experts' Group on R&D Priority Setting and Evaluation

Rijksdienst voor Ondernemend Nederland

Introduction to this workshop and the EGRD

Rob Kool

Chair IEA Experts' Group on R&D prioritysetting

The group & previous work (1/3)

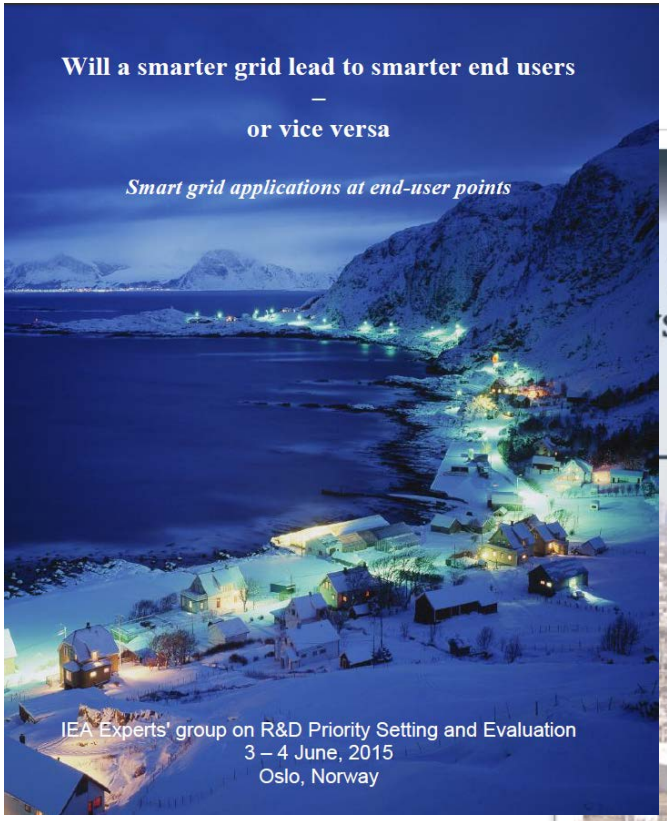
- Experts' Group on R&D Priority Setting & Evaluation
  - Part of the IEA Technology Network.
  - We organise 2 workshops/annum.
  - Our recommendations support the Committee on Energy Research and Technology (CERT), feed into IEA analysis, and enable a broad perspective of energy technology issues.
  - Work based on a 3 year program.

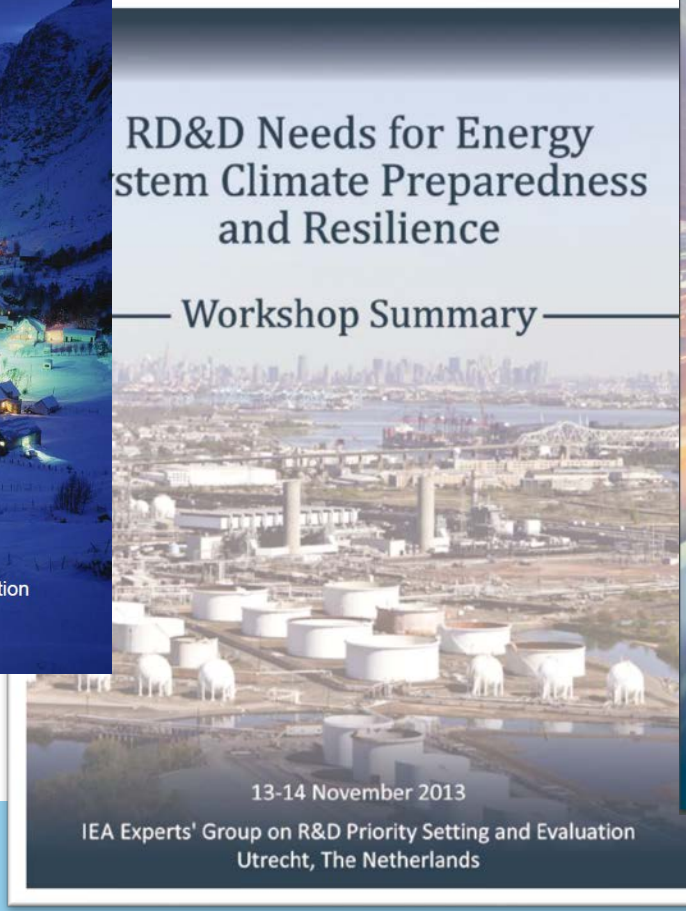
1975 - 2015 iea Energy Technology Network
Accelerating results for 40 years

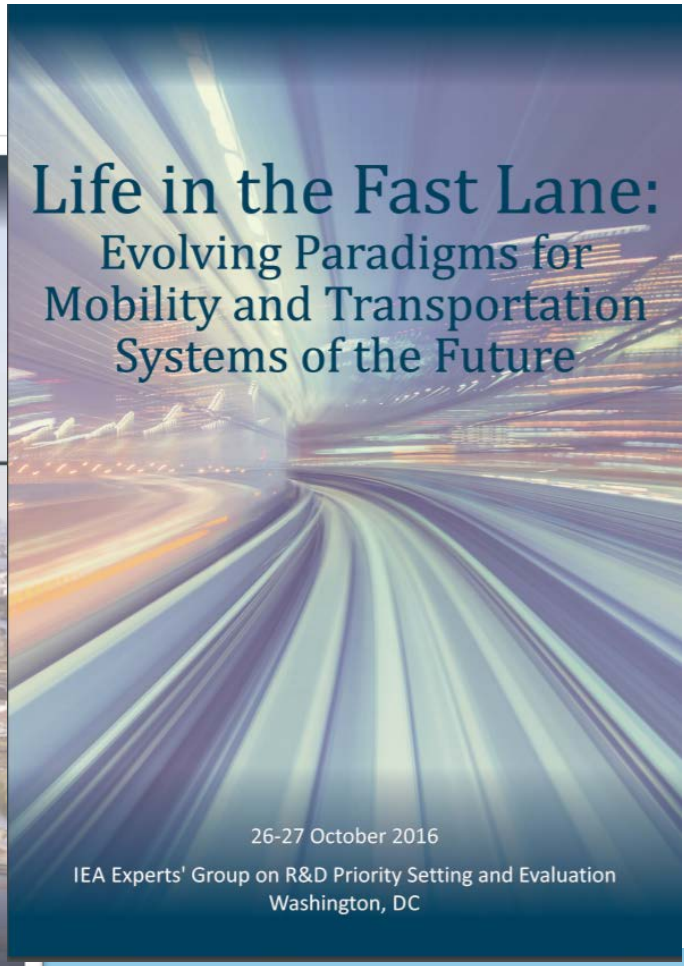
The group & previous work (2/3)

- The EGRD examines analytical approaches to energy technologies, policies and R&D. As such our recommendations can contribute to:
  - Theory: support of the methodology of priority setting & evaluation
  - “Test results”: discuss IEA work with the “practitioners in the field”: roadmaps (always together with IEA secretariat)
  - Cross-cutting: combine fields of expertise to speed up processes or determine blind spots.

The group & previous work (3/3)

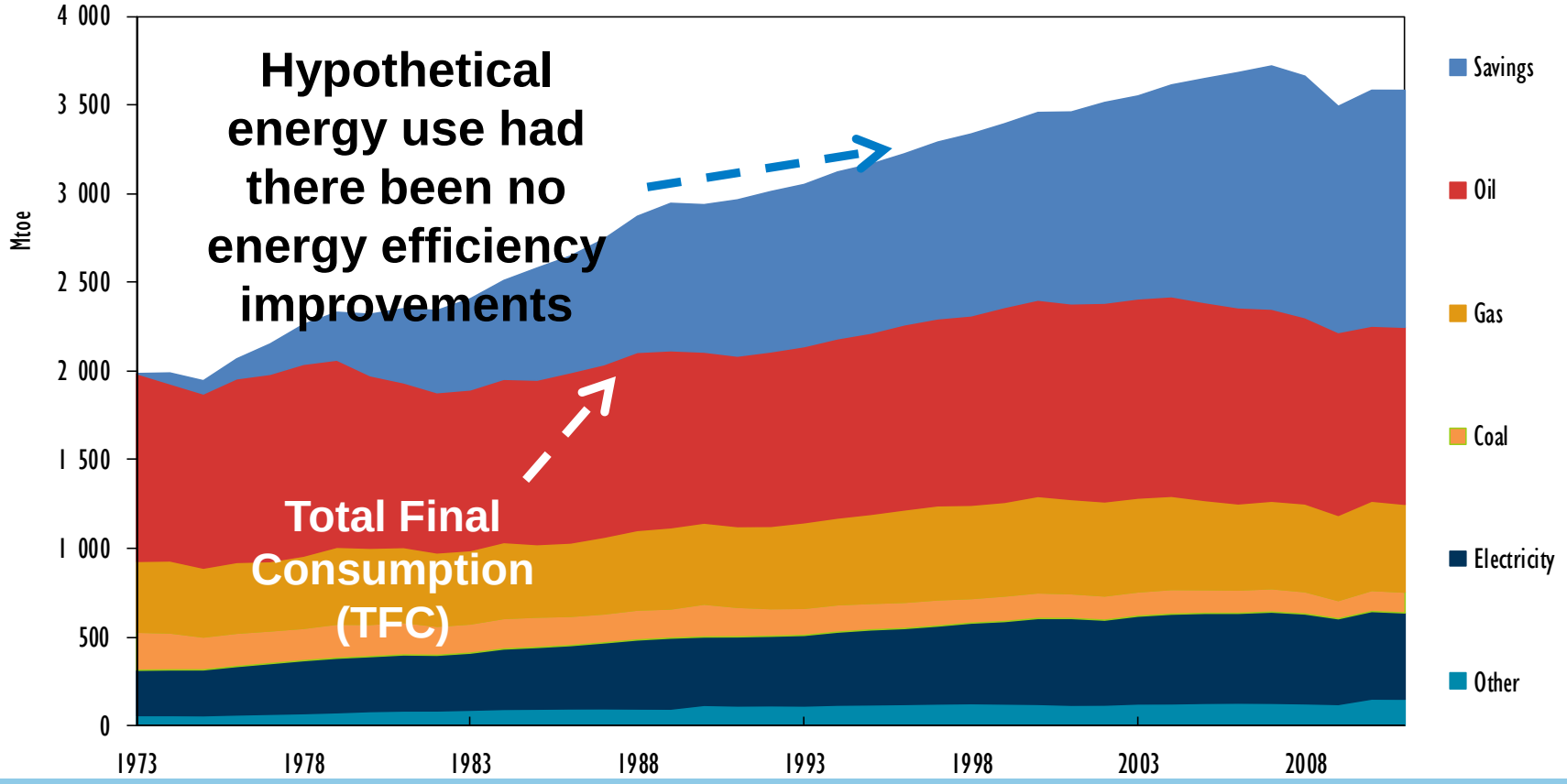






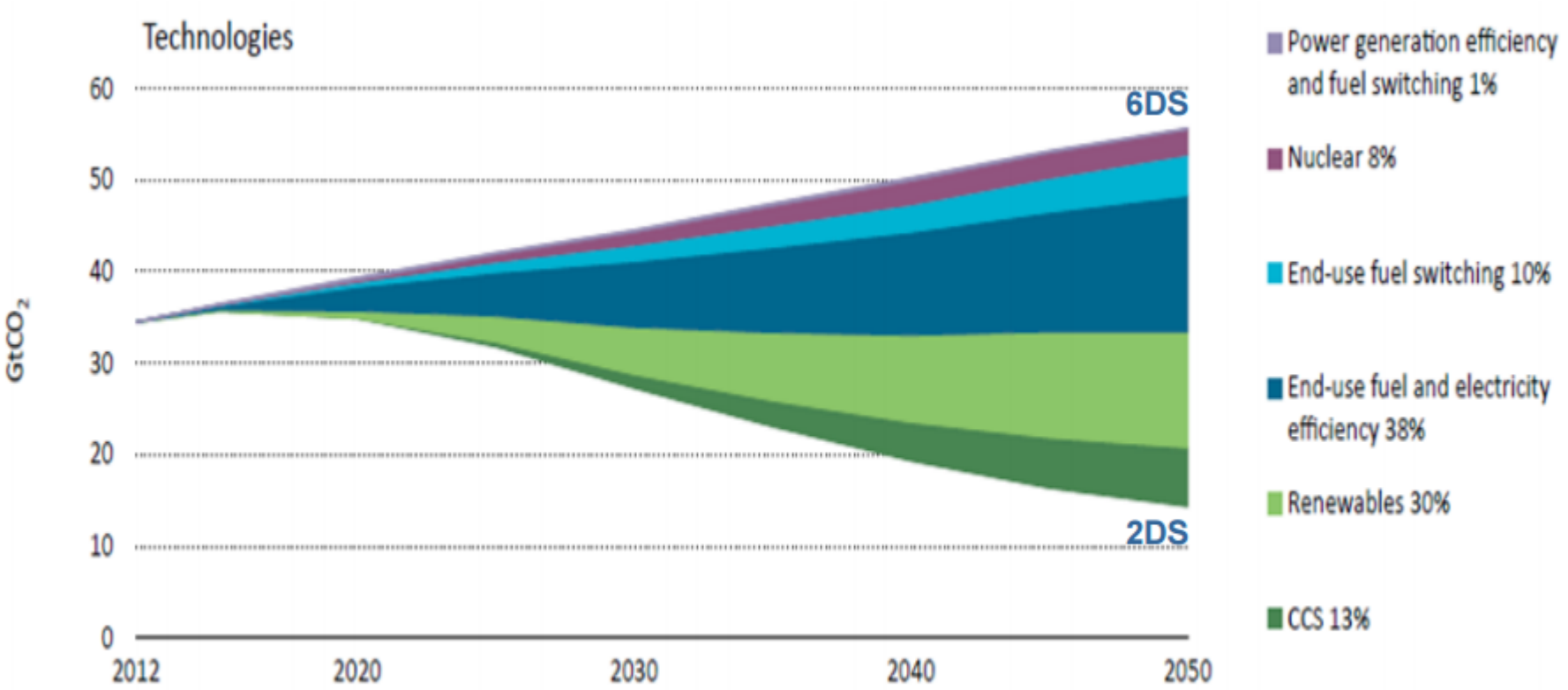
Output - Energy efficiency: the 'first fuel'

savings larger than the contribution of any other fuel to TFC in 2012



*IEA-11: Australia, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, Sweden, United Kingdom, United States

Technology area's contribution to global cumulative CO_2 reductions



Energy innovation has already started delivering, but more is needed

International Energy Agency
Secure • Sustainable • Together

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Blue sky research for energy technology

The role of blue sky research and innovation in addressing energy challenges

Some general notions

- Global energy markets today are dynamic and undergoing a transformation.
- Advanced technologies create new options for energy systems.
- Witness the deep reductions in the cost of technologies, such as LED lighting, lithium ion batteries, wind and solar power;
- new materials with revolutionary properties that open vast new horizons for innovation;

- The capacity to innovate is fast becoming the most important determinant of economic growth in the 21st century global economy.
- Innovation is a shared consequence of inspired creativity, leadership and investment in research by both the public and private sectors.
- Many of the most innovative technologies shaping global energy markets today can trace their origins to public investments in “blue sky” research

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Questions to be addressed:

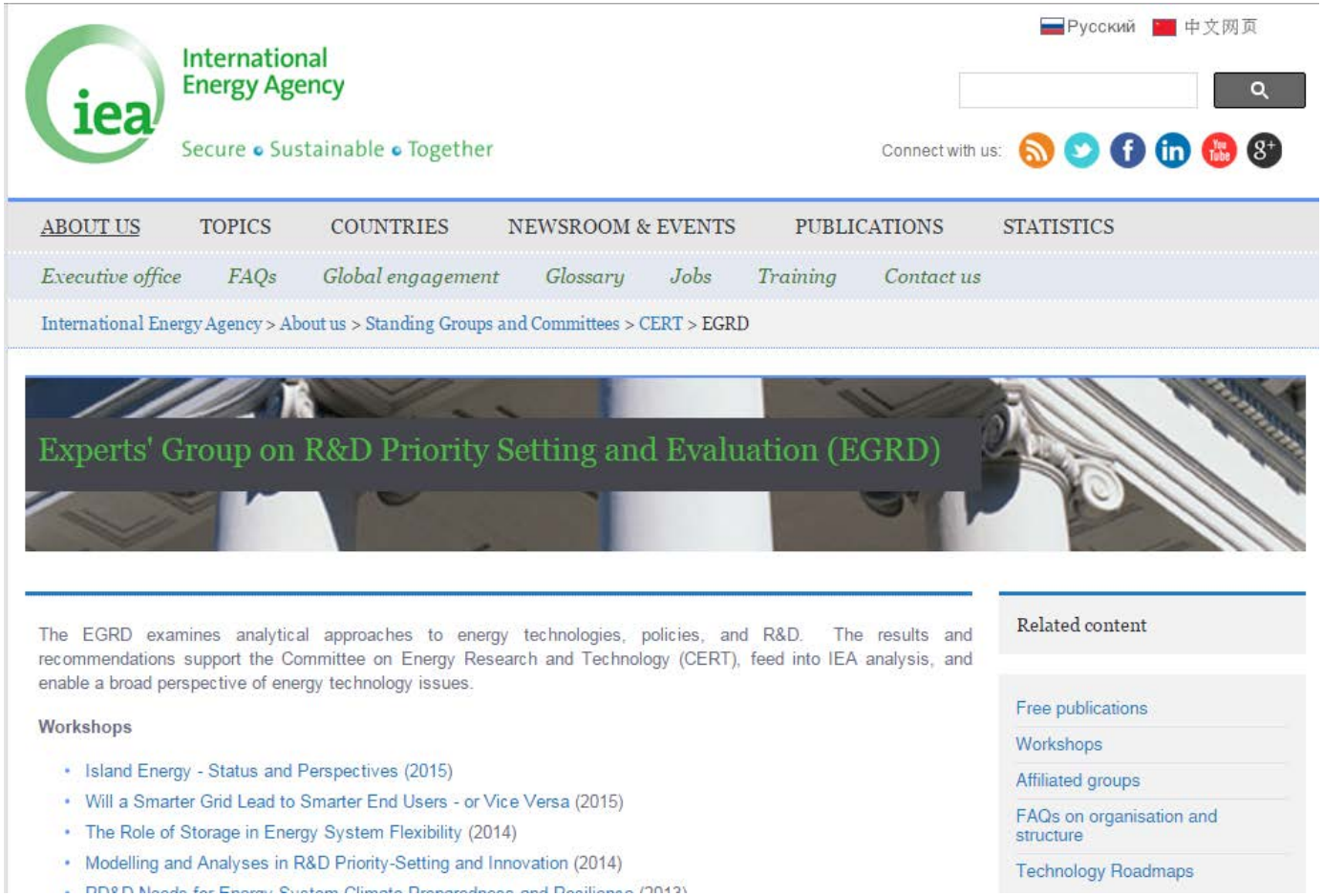
- *What are the drivers for government basic science programmes: science, society or both?*
- *What are the linkages between basic research, applied science and disruptive innovation?*
- *How can such lessons be applied to guide or improve future public investments in energy-related basic science research?*
- *What are the means for transitioning BSR outcomes to innovative energy-related products?*
- *Which current topics in basic science could potentially have a big impact on the energy sector?*
- *What are the most effective framework conditions for stimulating BSR schemes?*

- *At what point is industry involved in basic science programmes or their outcomes?*
- *What are the processes that lead to a disruptive innovation? What are the effects on socioeconomic issues (economy, lifestyles)? Are they seen as being positive or negative?*
- *What lessons can be drawn from the history of blue sky research and various government innovation models, in terms of best practices and disruptive, but productive innovation?*
- *Can disruptive innovations for the energy sector be anticipated? If so, how could these horizon scanning efforts be integrated into programme planning?*

This is how we work..

- We challenge you to answer & debate the questions in the rational during:
  - the presentations
  - the summery
- The results will be presented on the IEA website: www.iea.org/aboutus/standinggroupsandcommittees/cert/egrd/ (just google: IEA EGRD)
  - Please sign the waver…..
  - A report later this year

Q&A



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