

Om IEAs ENARD ...

...och något om annat internationellt arbete med Smart-Grid

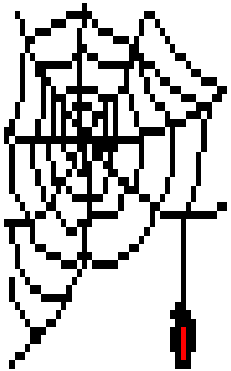
Av Stig Göthe, Power Circle AB

Power Circle

Ca 40-talet medlemmar,
med en klar majoritet av de som arbetar med
elkraftteknik i Sverige bakom sig



Electricity Grids – A key enabler in the delivery of a sustainable energy policy



ENARD is:

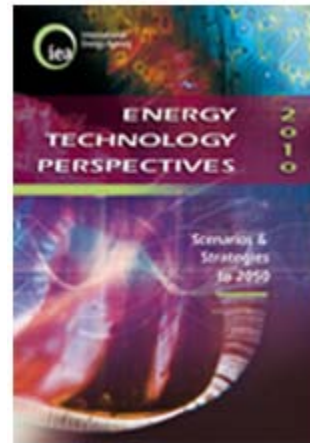
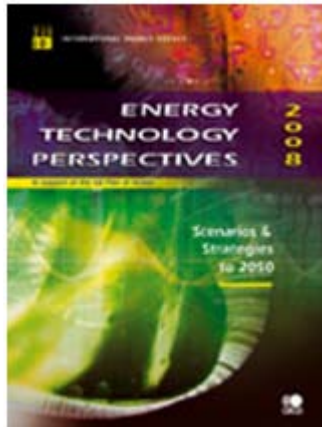
- an IEA implementing agreement about Electricity Networks Analysis, Research & Development (ENARD)
- **a networking network about the development of networks**



International Energy Agency in Paris

Among other things a publisher of

Energy Technology Perspectives 2008



Energy Technology Perspectives 2010

Electricity networks

Changing profiles for demand and generation will require modifications in the design, operation and deployment of electricity networks, with regional characteristics becoming more important in determining network configurations.

Although system-scale demonstration is still needed, the flexibility of smart grids (which integrate both electricity and thermal storage technologies) appears to support balancing of variable generation and demand, better management of peak loads and delivery of energy efficiency programmes. Smart grids can contribute to reducing CO₂ emissions from both electricity generation and use. In developing countries, smart grids will facilitate expansion of electricity services, and show significant potential to reduce transmission and distribution losses.



ENARD:- The IEA Implementing Agreement on Electricity Networks Analysis, Research and Development





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Who We Are

ENARD is an IEA Implementing Agreement, developed **on a collaborative basis in** conjunction with a wide range of interested parties and stakeholders, drawn from a cross-section of the IEA member countries, over a period of some 18 months, from early 2005 through to the formal establishment of the Agreement, July 2006.

ENARD, also known as the IEA Implementing Agreement on Electricity Networks Analysis, Research and Development, **functions within a framework created by the International Energy Agency (IEA).** The views, findings and publications of ENARD do not necessarily represent the views or policies of the IEA Secretariat or of all its individual member countries.

Participants

- Austria
- Belgium
- Denmark
- Finland
- France
- Italy
- Netherlands
- Norway
- South Africa
- Spain
- Sweden
- Switzerland
- United Kingdom
- USA

I Sverige deltagar

Sv Kraftnät

Vattenfall

Fortum

Svensk Energi

CTH,

KTH

STRI

samt Power Circle, som på Energimyndighetens uppdrag koordinerar det svenska arbetet

ENARD was developed from the outset with the organizational and operational structure of a multiple Annex Implementing Agreement, figure 2, with the provision for a series of discrete Annexes (or projects), to address particular areas of interest, within the overall structure of the Implementing Agreement.

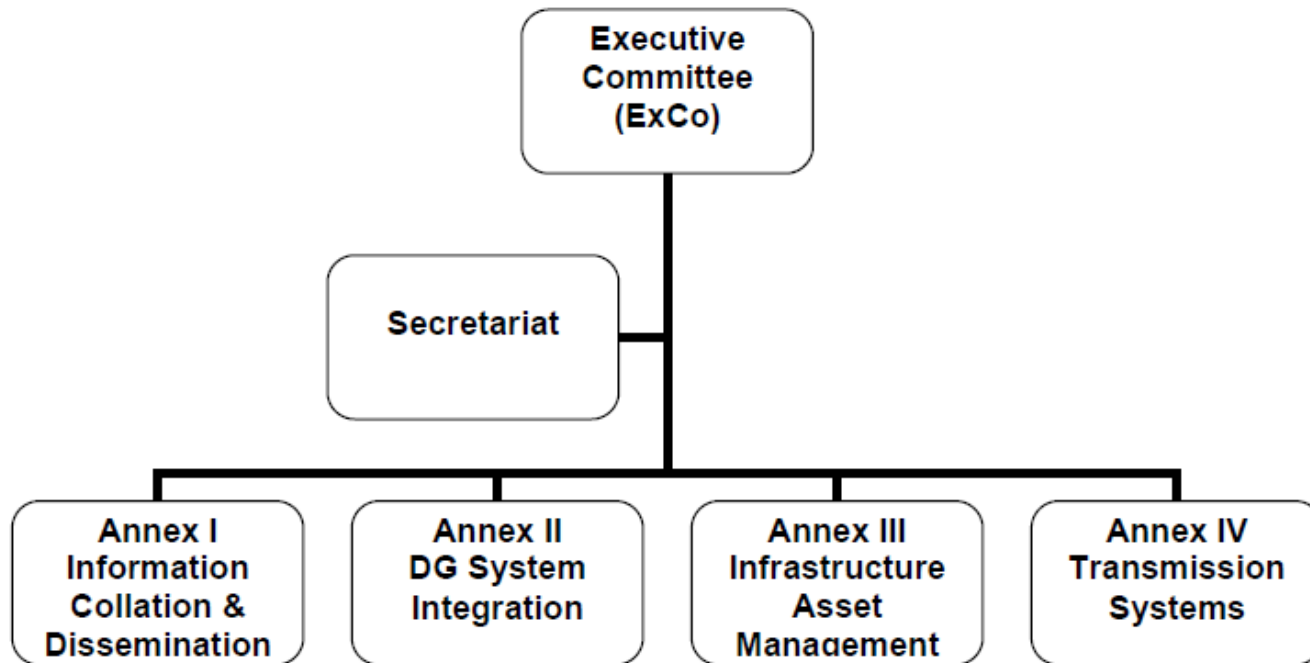
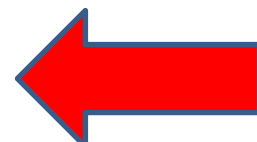


Figure 2: Organisational & Management Structure

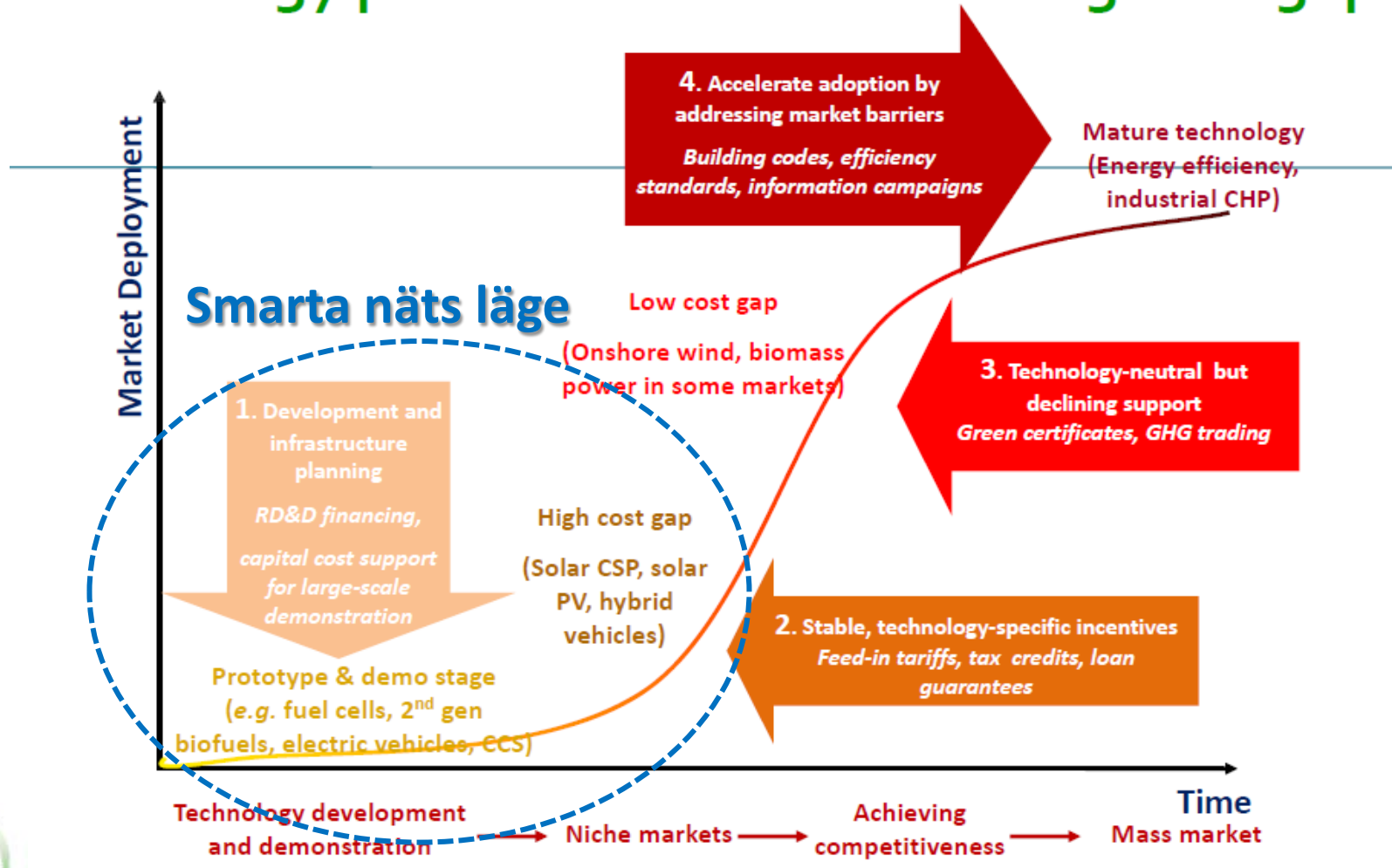
Table 1:- Annex I Workshops

Date	Venue	Theme
September 2006	Milan, Italy	Distribution Systems and Association End User Issues
March 2007	Vienna, Austria	Integration of Distributed Energy Sources and New Business Models
May 2007	CIREN, Vienna	Managing an Ageing Infra-structure
June 2007	Leuven, Belgium	Economic & Regulatory Issues
September 2007	Trondheim, Norway	Transmission Systems Issues
April 2008	Chester, UK	Intelligent Networks
May 2009	Gotland, Sweden	Communications & Control
October 2009	Fredericia, Denmark	Balancing the Variability in Renewable Electricity Supplies
September 2010	Madrid, Spain	<i>Markets and Regulation – financing the Smart Grid</i>

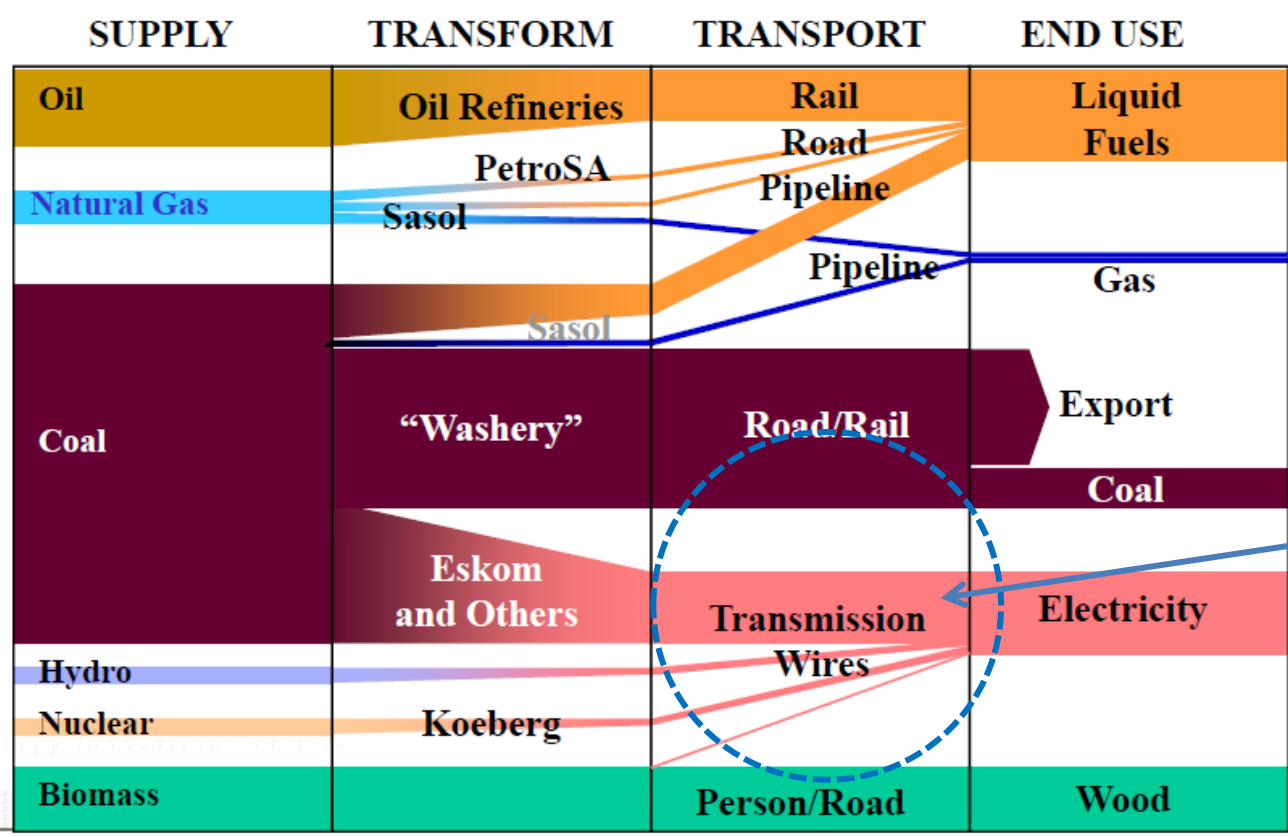
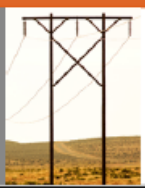


Aktuell
28-29 sept

Technology policies are needed to bridge the gap



Energy Overview: Energy Flows

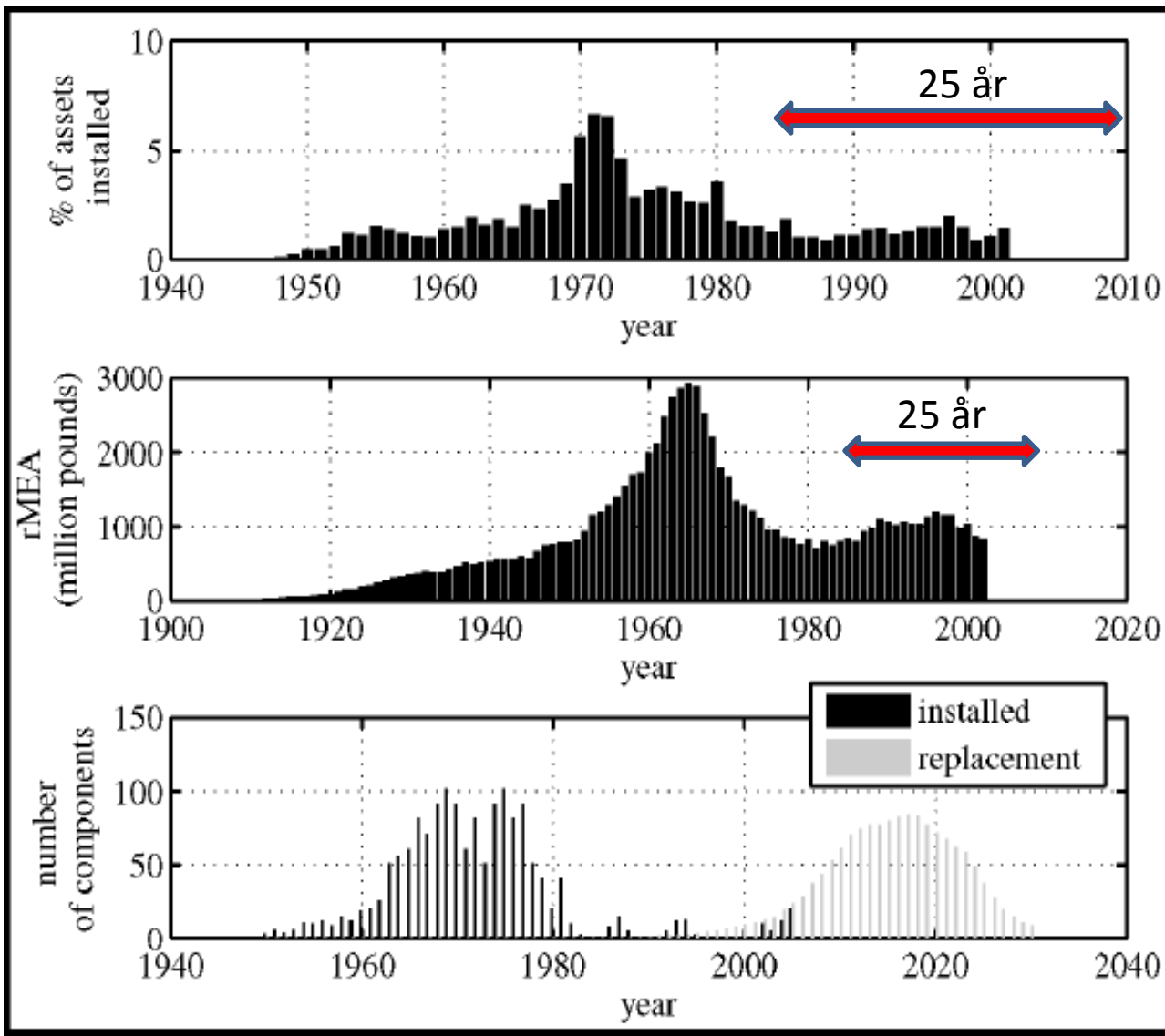


Smart-grid omfattar alla länder, även utvecklingsländer

Of increasing importance
Everywhere !



Exempel EU perspective

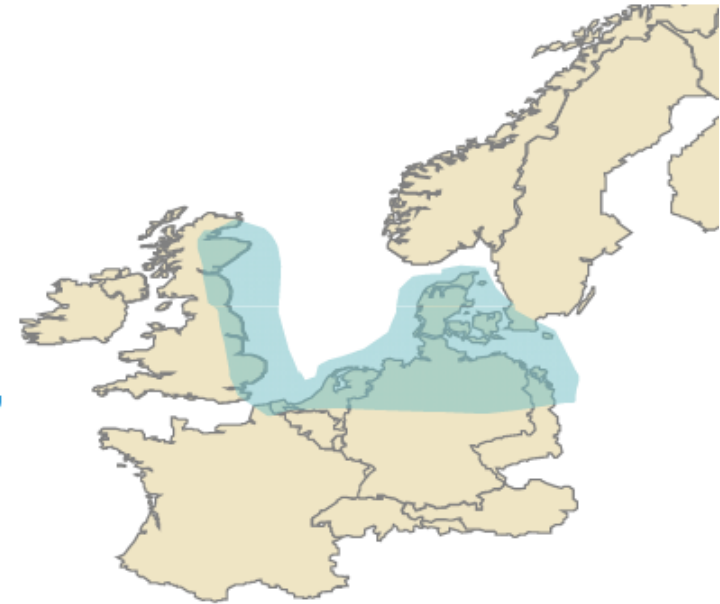


Åldrande europeiska nät
just när nya krav på
nätfunktioner dyker upp.

En för- eller nackdel ?

THE NORTH SEA AREA WIND POWER DEVELOPMENT – 2020 SCENARIO

- Offshore:
40 000 MW
- Total onshore/offshore:
100 000 MW
- Creating a Wind Belt
onshore/offshore from
UK via France, Belgium,
The Netherlands,
Germany, Denmark and
Southern Sweden



Norska affärs- och kraftintressen för förnyelsebart och reglerkraft runt Nordsjön



Announcements

The MEF launched the Technology Action Plans for the Global Partnership on 14 December 2009.

[More information »](#)

The Clean Energy Ministerial was held 19-20 July 2010 in Washington, DC, USA.

[More information »](#)

The Second Clean Energy Ministerial will be held April 2011 in Abu Dhabi, UAE.

Major Economies Forum



The Major Economies Forum on Energy and Climate (MEF) was launched on March 28, 2009. The MEF is intended to facilitate a candid dialogue among major developed and developing economies, help generate the political leadership necessary to achieve a successful outcome at the December UN climate change conference in Copenhagen, and advance the exploration of concrete initiatives and joint ventures that increase the supply of clean energy while cutting greenhouse gas emissions.

Skapat av 17 "Major Economies"

Sverige medverkar (som observatör ?)

Korea o Italien leder smartgrid projekt

Pengar från USA o Korea i utsikt.

Leder eventuellt till nytt IEA "implementing agreement" om smart grid kallat ISGAN ?

Slut på bilderna....

IEA Implementing Agreement on Electricity Networks Analysis, Research & Development (ENARD)

Annex I Workshop “Markets & Regulation - Financing the Smart Grid”

to be held

at Union Fenosa Distribution,
Madrid,
Spain,

Tuesday 28th and morning of Wednesday 29th September 2010.

contact the ENARD Secretariat at michelle.chambers@eatechnology.com

