Electricity

- Is not going out of fashion
- Is the key battleground of climate policy
- Has been getting more, rather than less, carbon-intensive globally
- Is the key driver for gas and coal demand
- Has a transformative efficiency potential in Russia
State of decarbonization: first stop digging

Global average carbon intensity of power generation, kg CO2/Mwh

© OECD/IEA 2011
Decarbonization race: a troika with only one horse pulling
Status of low carbon technologies 1

Nuclear: Back to Square 1 after Fukushima?

Average yearly increase, WEO 2010 450 ppm
Average yearly increase, WEO 2010 NPS

New nuclear capacity construction starts, MW
Status of low carbon technologies 2

CCS: serious risk of delayed deployment

"The Dutch government said Thursday it will not allow oil giant Shell to store millions of tonnes of carbon dioxide in a depleted gas reservoir under a small town, upholding the fears of townspeople.

E.ON: incentive could have saved Kingsnorth CCS project

Company suggests "low carbon" version of the Renewables Obligation including CCS and nuclear might have kept project in the UK

By Will Nichols

21 Oct 2010

Storage Concerns Delay Australian CCS Timeline

March 21, 2011

On 27 January 2011, Australia’s federal government announced that it would delay and reduce the funding available to support its A$2 billion carbon capture and storage (CCS) Flagship funding program in order to support Queensland’s flood recovery efforts. As part of those efforts, A$160 million in CCS Flagship funds will be deferred until after 2015, while A$90 million will be cut from the CCS Flagship budget altogether. Key tenders in this On Point include:

Norway delays CCS project again, angers greens

(Reuters) - Norway said on Tuesday it would delay again a decision to finance a top carbon capture project, this time to 2016, in a setback for a technology that is seen as key to mitigate climate change.

Rotterdam offers the location for the construction of a large-scale power station, which has access to the sea for sea ships that can transport the CO2 and the solid fuel.

Updates

Announcement - Feasibility study stopped

After close consultation between Havenbedrijf Rotterdam NV and C. GEN NV it has been decided on October 26, 2010 to stop the feasibility study on the establishment of a hydrogen power plant (Integrated Gasification Combined Cycle) on the Kop van de Beer-site.

The reason is the technical feasibility of this location, coupled with uncertainties regarding regulation and storage of CO2 in the Netherlands
Status of low carbon technologies 3
Renewables: strong growth but not always on the best places
German moratorium: European scale effects

Where the replacement of German nuclear comes from?

- Germany, coal
- Germany, gas
- France
- Scandinavia
- Netherlands
- Central Europe
Moderate, 10% price reaction due to excess capacities

EU power prices still below the level that would recover investment in new plant
Gas will be needed to deliver CO2 reductions

German electricity mix with 10% demand reduction, no nuclear, 35% renewables and CO2 at the target level
US: the Golden Age of Gas has arrived

Share of coal and gas in US power generation

280 Twh coal to gas switch in 3 years
China: with energy efficiency efforts and the biggest nuclear and renewable program in the world

Coal fired power generation still grows by over 100 twh/year
Russia: (Re)Search to improve power sector

Gas Turbines: GE, Mitsubishi, Alstom, Siemens, Westinghouse
Gas Turbines: GE, Mitsubishi, Alstom, Siemens, Westinghouse. Here are some Gas Turbines from GE, Mitsubishi, Alstom, Siemens, Westinghouse.
www.powerplantjobs.com/ppj.nsf/TurbineTypes?OpenForm - Cached - Similar

Alstom Launches Upgraded GT26 :: POWER Magazine
1 Aug 2011 ... Like GE Energy, Siemens, and Mitsubishi Heavy Industries, Alstom has been developing a gas turbine that pushes the 60% efficiency barrier. ...
www.powermag.com/gas/Alstom-Launches-Upgraded-GT26_3872.html - Cached - Similar

High-Efficiency gas turbines add new flexibility | Control Engineering
25 Jul 2011 ... Siemens' H-class gas turbine, the largest machine of its type in ... such as Alstom, GE, Mitsubishi Heavy Industries, and Siemens, offer turbines ...
www.controleng.com/single...gas-turbines-add.../9a6d35a104.html - Cached - Similar

GAS TURBINES IN SIMPLE CYCLE & COMBINED CYCLE ... 
Alstom's GT-8C2, 50/60Hz gas turbine with basic specification .... SGT-600 Industrial Gas Turbine - 25 MW (former designation, Alstom's GT10) (Source: Siemens ... Figure 18
How to make it happen

- Adam Smith 1776: peace, taxes, justice
- IEA 2011 (ongoing work on Russian power sector reform): elimination of gas subsidies, proper price signals for gas and electricity, market design