

OUTCOMES GROUP SESSIONS



Group 3

Scenario Workshop – MSs/NRAs/EC feedback

5 July 2016

Split per groups

| First Name | Last Name |
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| Ruxandra Raluca | Florescu |
| Sebastian | Gras |
| Sébastien | Lepy |
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| Stefan | Dunke |
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| Susanne | Strobl |
| Tarvo | Siukola |
| Tatu | Pahkala |
| Tomas | Skrha |
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| | | |
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|---|---|---|

Morning session. To warm
up towards scenario
development

Discussion uncertainties and stories of scenarios

Question: Is it necessary to “connect the dots?” . To have one storyline all the way from 2025 to 2040? Pros and cons of the different of the different options? 10 min. per question

Which assumptions are most uncertain for the near term (until 2025)?:

Financial crisis, investment climate.

Households disconnected form the grid (maybe only for the longer term?)

Technology developments: small scale storage, large scale storage, etc. Electric vehicles. Power 2 gas. IT development for demand side response.

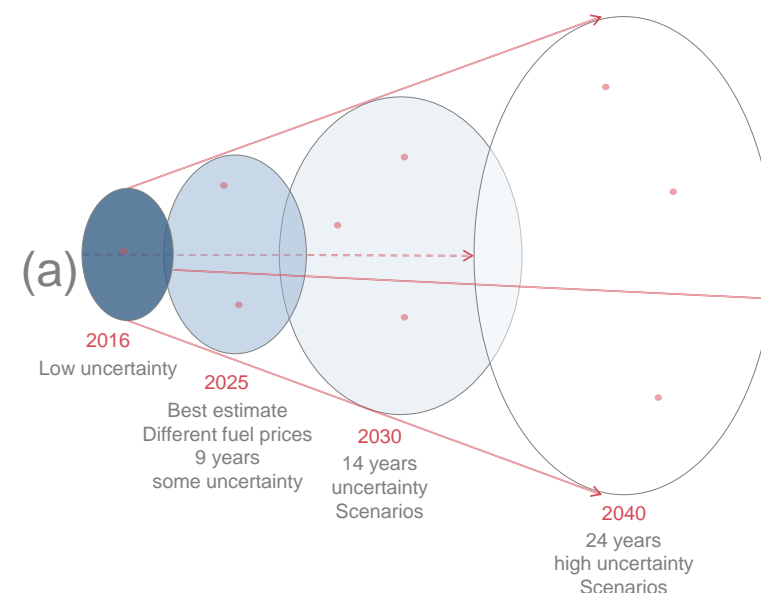
ETS system (lot of effort is put into it, but results are not yet observed)

National vs international targets, agreements, etc.

Focus on national security of supply? (do we want more interconnection)

How is the development of RES progressing from 2020 to 2030 ?

- At EU level? National level?
- Needs strong support? Happens anyway? Reaching the target.



Discussion uncertainties and stories of scenarios

Question: Is it necessary to “connect the dots?” . To have one storyline all the way from 2025 to 2040? Pros and cons of the different of the different options? 10 min. per question

How is the development of RES progressing from 2020 to 2030 ?

- At EU level? National level?
- Needs strong support? Happens anyway? Reaching the target.

Increase in off shore wind and solar.

Hydropower and biogas in CZ. No wind revolution PL: policy trend towards large scale generation of coal, plans for nuclear.

New and more efficient coal fires power plants

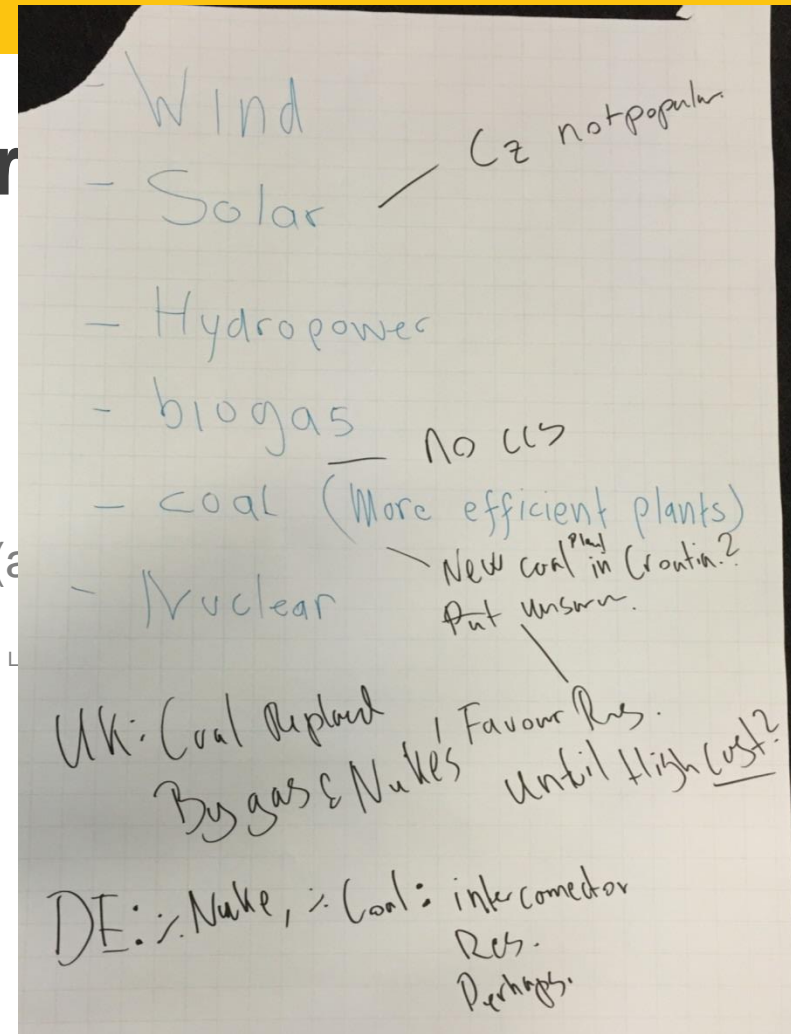
Shutting down coal and replace it with gas and renewables.

New nuclear.

Cz: no support. Solar not very popular. Working for making solar easier

PL: only coal

Croatia: reaching the target, but if the cost goes up...



Discussion about the use of coal and gas for power on the short time horizon (2025-2030)

What are the drivers towards gas being used before coal (Get people to write the answer on post it notes and sort in groups. Three per person) (10 min)?

Groups

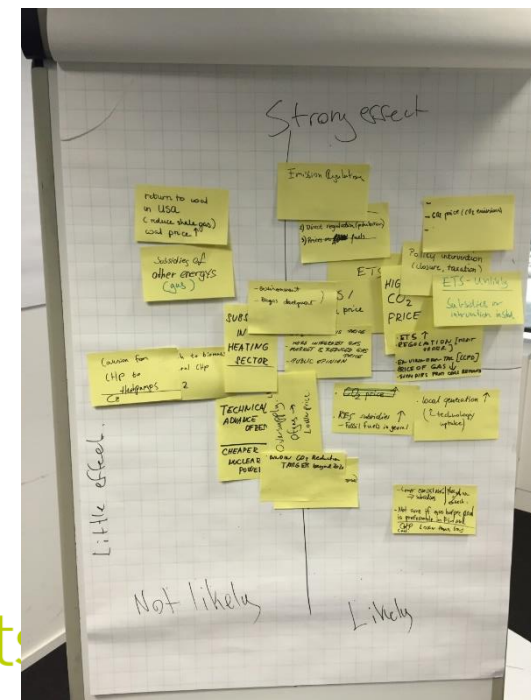
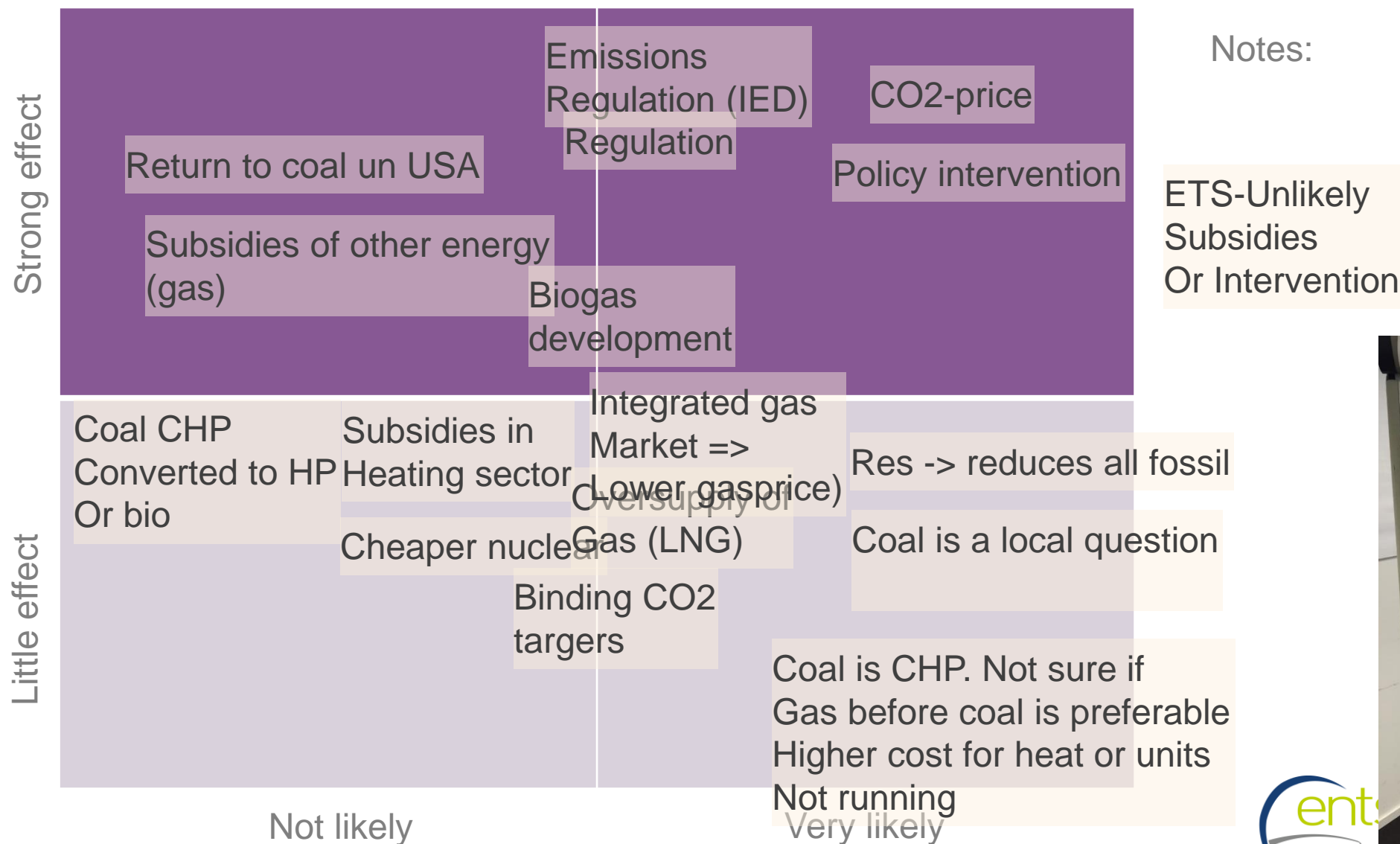
Regulatory or Political drivers:

Technological drivers:

Economic drives:

Other:

How likely are these (drivers) to happen? (10 min)



Do we have coal in power generation, heat and industry in 2040? (10 min)?

How many says yes: 9

How many says no: 1

Arguments for (2-3):

Realism. Takes time to drop coal

Lifetime of plants (30-40years) (new are being built)

Coal owned by private companies (expensive to make them disband coal)

Better to spend money on research than quick expensive fix by closing coal

Arguments against (2-3):

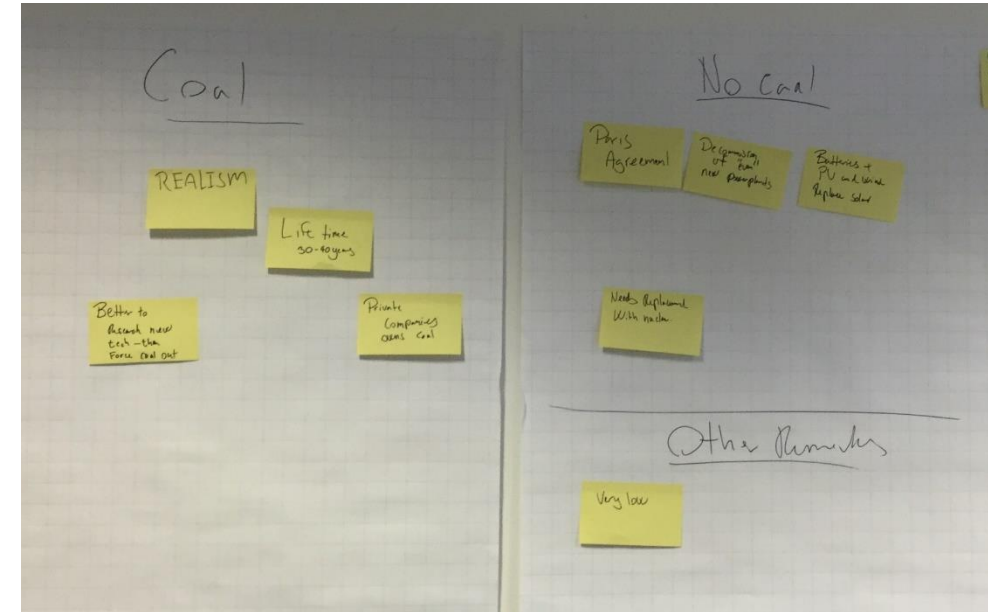
Paris agreement (no room for coal)

Decomission or conversion of even "new" coal plants to fulfill agreement

Batteries+PV+Wind cheaper than coal. Will replace coal

Other remarks:

Coal is very low in 2040



Afternoon session. Build
your own scenario

Build your own scenario (1,5 h)

Ask the group to come up with a name for a scenario (or two) and build their own scenario (more if there is time)

*Start with a blank flipchart: describe the scenario in short sentences. Three to four elements. The scenario should be **plausible/believable**.*

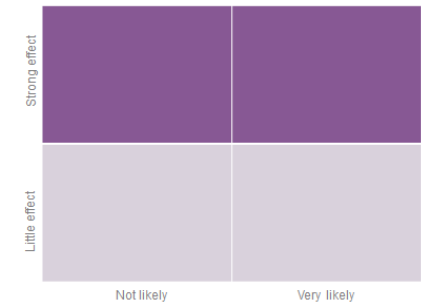
Defining questions: Do you think we are on, above or below the climate target for 2030?

Defining storyline for your scenario? Example: nuclear, green ambitions, economics.

Which relevant developments in society and technology do we need to represent in the scenarios for 2030? →

How do you imagine 2030?

Which relevant developments in society and technology do we need to represent in the scenarios for 2030?



Put on post it notes. Collect post it notes: categorise according impact (2030) vs. likelihood matrix. Placement discussed in group. (15 min)

Notes:

Elements of the 2030- Visions: Brainstorming

Development of RES happens even though political environment is unambitious!

Major uptake of offshore wind in the northern seas

Electric vehicles mainstream

Power 2 gas mainstream

Coal still important in parts of Europe

Agreement of global carbon market

Low nuclear

More renewables

Electricity and gas in transportation

Increase in RES

Decrease in Lignite

Small increase in el. vehicles

Stable demand

High Carbon price

Is the 2030 target still everyone's target. (increase, focus on migration, national targets). What happens if only few delivers on targets. What happens next?

Market order reflects true cost in the grid

Ensure flexibility in grid

Res where most efficient

Low investment levels

National policies prevail

Res support scheme

Smart households

Res gets competitive (no more subsidies)

Res subsidies

Distributed generation (so cheap everybody buys)

Demand flexibility

Security of supply, interconnections

Gas replaces coal

Power following role of RES

Maturity of technologies: Storage, electric cars, efficient appliances, digitalisation

Power system more interconnected

Large use of data and digitalisation: optimisation and efficiency of energy systems, demand response.

More renewables (subsidies)

More demand flexibility

RES-investments with reasonable subsidies

Growth in energy storage, demand response and electric vehicles

Engaged Consumers

Name brainstorming

Sustainable Green Power To The People (trend)

RES subsidies, low prices and distributed generation (we still need the transmission grid, not all generation is distributed)

Still have: large scale wind, PV, backup solutions and biomass.

| Factor | | |
|--------------------------|------------------------------|---|
| Scenario name | | Sustainable Green Power To The People |
| Category | Criteria | |
| Macroeconomic Trends | Climate action driven by | Subsidies or incentivising frameworks. To RES and decentralised solution.. CO2 price low |
| | EU on track to 2050 target? | Yes |
| | Economic conditions | Strong (above Zero) |
| Transport | Electric and hybrid vehicles | Growth. Electric cars will use green energy (from the GRID and partly from rooftop PV). Vehicle to grid is too early for 2030. |
| | Gas vehicles and shipping | Slow. Busses and ships. |
| Residential / Commercial | demand flexibility | High |
| | Electric heat pump | Growth Small (electric demand increased in total due more power for heating and transportation) |
| | Energy efficiency | High (for industry and residential) |
| | Dual source heat pumps | Average (higher than electricity) |
| Industry | electricity demand | Decrease (due to industry and decoupling of energy consumption and GDP) (could be increased due to conversion from electricity) |
| | gas demand | Stable or decrease (same reasoning as electricity) |
| | demand flexibility | Marginal |
| Power | Merit order | Coal before gas (or gas before coal through subsidies or incentives) |
| | Nuclear | Stable on average. Development in some regions. No expansion on average. Example: No new nuclear in UK. New nuclear in Finland. |
| | Storage | High: local storage (small scale by the individual buildings. Batteries). Large scale storage. |
| | Wind | Centralised offshore |
| | Solar | Rooftop PV |
| | CCS | No |
| | Adequacy | At least regional. Limited growth in interconnections (due to decentralised) |
| Gas Supply | Power-to-gas | Marginal but growing). Alternative to storage. |
| | Shale Gas | No. |
| | Bio Methane | Growth (decentralised by nature) |
| Other | Gas for power | Gas provides flexibility. Gas is transition fuel Long term solution no fossil gas. |
| | Subsidies for coal | Taken away |
| | Coal | Coal is marginal |