How to make the most of your ENTSO-E

QUESTIONS FOR THE DAY

Group 3

Scenario Workshop

2 JUNE 2016

Reliable Sustainable Connected

Split per groups

Firstname	Last name	Group
Alexander	Scheibe	2
Alexander	Phillips	1
Ali	Shahbazov	1
Andrei	Dumitru	3
Anton	Nordstram	3
Antonio	Gomez Bruque	2
Celine	Heidrecheid	2
Cliff	Simon	3
Daniel	Hosp	3
David	McGowan	2
Eugen-Costinel	Mihalache	2
Frida	kieninger	2
Gabor Miklos	Dudas	4
George	George	4
Gianluca	Flego	4
Heiko	Stubner	4
Idoia	Lejona	2
James	Gudge	3
Jan	Kostevc	3
Jean-Francois	Fauconnier	2
Jerome	Le Page	3
Jon	Gibbins	1
Jorgen	Apfelbeck	1
Juan	Lopez-Vaquero	3
Julia	Platona	1
Kees	Alberts	4

Firstname	Last name	Group
Kostis	Sakellaris	3
Manon	Dufour	2
Marco	Gazzola	4
Margherita	Salucci	1
Maria	Castro	4
Mark	Johnston	4
marta	navarrete	2
Michael	Joerg	1
Mikolaj	Jasiak	3
Niels	Franck	4
Olivier	Lebois	2
Pekka	Vile	4
Philipp	Thaler	1
Pieter	Boersma	4
Roland	Joebstl	1
Sanjeev	Kumar	4
Siobhan	Hall	4
Sophie	Westlake	2
Stefan	Dunke	3
Stefano	Astorri	1
Sylvia	AngyalovÃ¡	3
Thomas	Rzepczyk	3
Stefanie	Scheidl	1
Victor	Charbonnier	2
Volker	Schippers	1
William	De Riemaecker	1

Morning session. To warm up towards scenario development

Discussion about years 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

A storyline from point to point all the way from 2016 to 2040 (b and c):

Preferred option but can a probabilistic approach be achieved, for example creating option C, using a reference scenario within other scenarios.

Pros: Keeps a range across the timeline. Understandable. Reflects the path that can reflect reality, interelated across time.

Cons: Option C offers too many combinations, difficult to assess infrastructure

No storyline from point to point all the way from 2016 to 2040 (a):

Pros: Easier to create.

Cons: Cannot capture temporal aspects (for example ETS). Cannot represent policy development.

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

Economic growth.

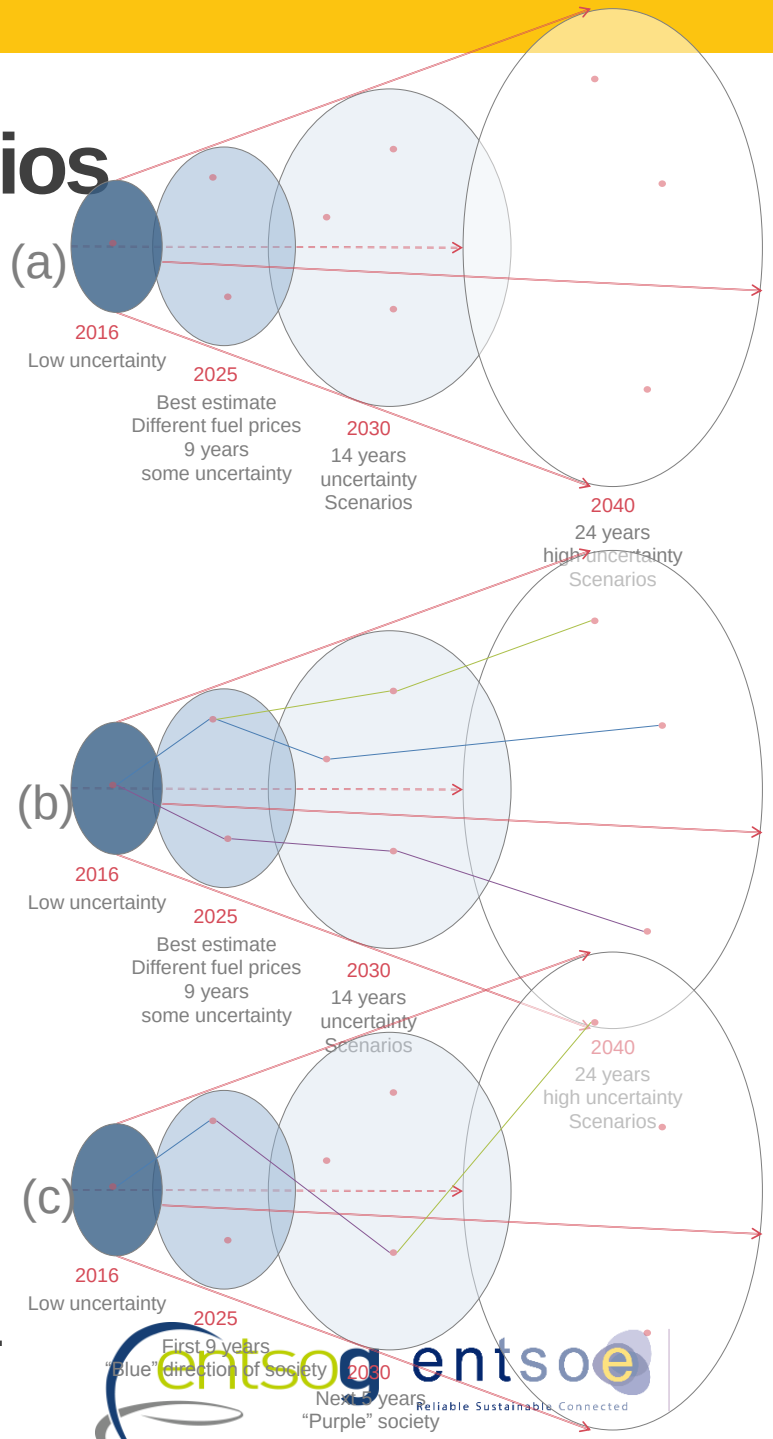
ETS. Carbon price.

Political action (subsidies for RE). Political decisions. National policy on energy mix/climate action.

Fuel prices – absolute and relative. Implementation of environmental targets.

Technology developement. Technological breakthrough. CCS . Battery costs

Output: Flexibility and constraints – driven by other categories – conventional sources in short term.



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) (10 min)?

Groups

Regulatory or Political drivers: European and national policy differences. These drive CO2 prices, minimum price or tax. Shut down of coal plants. ETS. Decision making around state owned coal/lignite sources.

Schemes for back up capacity – could be only linked to one source or another.

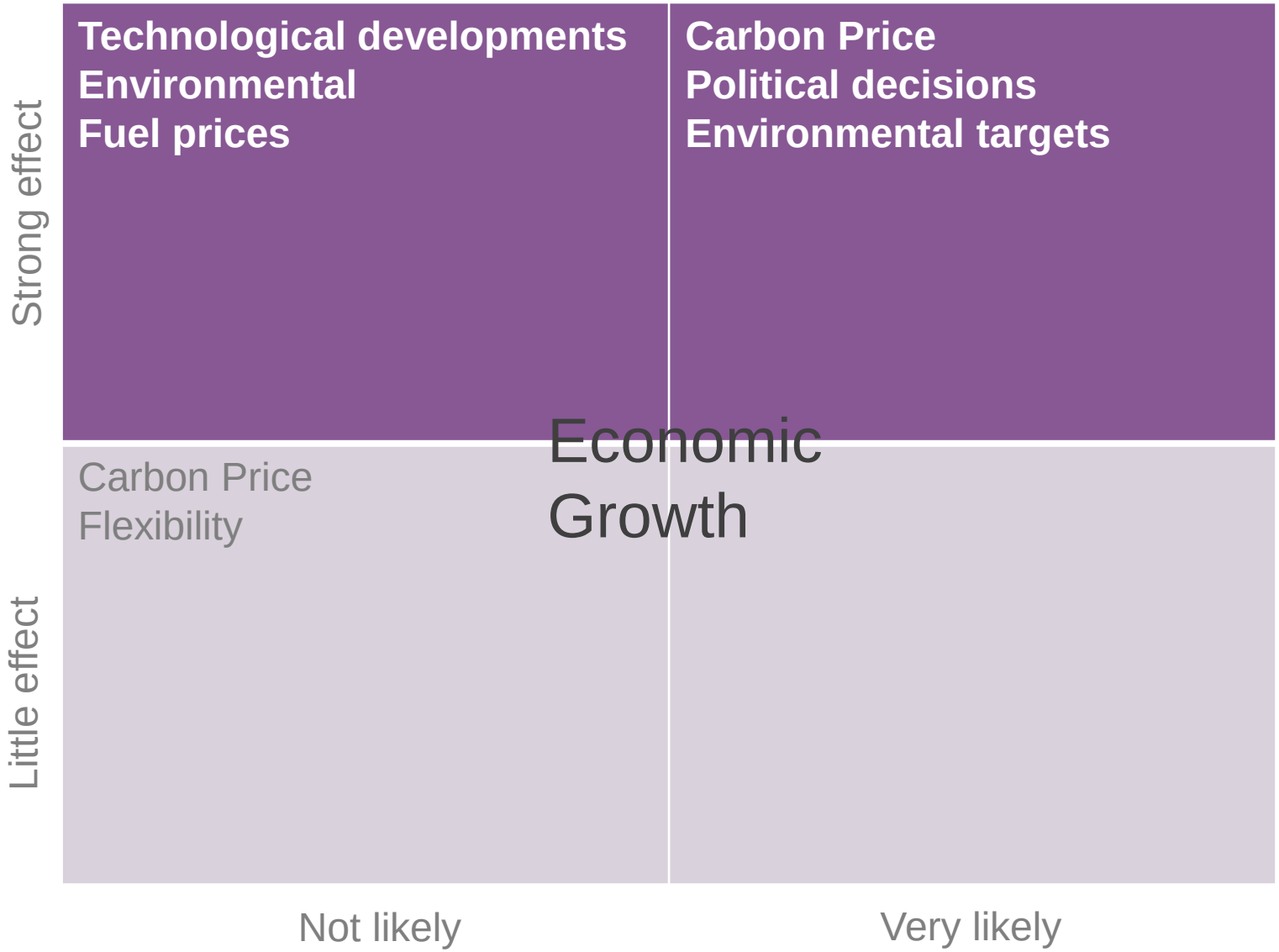
Technological drivers: Impact of installed RES capacity, flexibility required. CCS.

Economic drivers: Do not perceive fuel prices will impact this as not sure coal will become more expensive than gas without CO2. Clean spark spread.

Other: Jobs linked to coal lignite industry

Question around whether these are necessary for the scenarios, how will we use them – why not look at what is required for the system in different versions.

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



Notes:

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

	Not likely	Very likely
Strong effect	6xTech. Dev. 2xEnv. targets 1xPol. Dec. 2xFuel prices Economic growth	1xFlexibility 3xCarbon Price 3xEnvironmental targets 1xCarbon Price 1xFuel Prices 5xPol. decisions
Little effect	2xCarbon Price 2xFlexibility 1xFuel prices	1xCarbon Price 1x Tech. Dev. 1xEcon. Growth 1xEnv. Targets 1xFuel Prices 1xFlexibilty

Economic Growth

Notes:

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

How many says yes: Everyone

How many says no:

Arguments for (2-3): Will still be required for some processes.

Industrial applciations – steel for example.

Even if investements and decisions are made now it will still take time to these to take effect and lead to coal being phased out completely.

CCS is a possibility for 2040, may see other levels of coal being used. Could be on a country level development.

Security of supply

Social and political aspects

Arguments against (2-3):

Decarbonisation agenda

Replacement with gas

Other remarks: There will be something but not very significant. Social discussion around carbon capture

Afternoon session. Build your own scenario

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

	Not likely	Very likely
Strong effect	Wealth (GDP) EV affordable (possibly more likely) Batteries CCS Phasing out RES subsidies DSR + Smart grid	Energy Efficiency PV Costs
Little effect		Hyropower capacity Power to Gas Gas in transport + shipping Decarbonisation awareness Urbanisation Air pollution

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

Notes:

Ask for the not likely: are they relevant for 2040?

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.

How do you imagine 2030?

1st Scenario – Sustainable Transition

Increased distribution and RES generation. Hydro and gas back up. Increased transmission capacity/interconnection.

Decrease of coal in energy mix.

Switch from coal to gas. Market based policies – ETS. Integrated energy market. LNG and gas storage widely available.

Constant demand. Moderate growth of EV. Gas before coal in merit order. Moderate solar growth.

Less nuclear. Moderate growth of gas vehicles. Smart grid and demand response developments. Energy efficiency increase.

Moderate economic growth. On track to targets

2nd Scenario – National Focus

Low economic growth, low carbon awareness, mainly fossil fuels, regulated markets.

Factor		
Scenario name		Sustainable Transition
Category	Criteria	
Macroeconomic Trends	Climate action driven by	ETS
	EU on track to 2050 target?	On Target
	Economic conditions	Moderate growth
Transport	Electric and hybrid vehicles	Moderate growth
	Gas vehicles and shipping	Moderate growth
Residential / Commercial	demand flexibility	Moderate
	Electric heat pump	n/a
	Energy efficiency	Increases
	Hybrid heat pump	n/a
Industry	electricity demand	Constant
	gas demand	Constant
	demand flexibility	Moderate growth
Power	Merit order	Gas before Coal
	Nuclear	Reduced
	Storage	Moderate growth
	Wind	High growth
	Solar	Moderate growth
	CCS	No development
	Adequacy	European level
Gas Supply	Power-to-gas	Increased
	Shale Gas	Low development
	Bio Methane	Low development
Other		