Additional data

SJWS #2

Brussels – 18 February 2014

Additional data

> TYNDP 2013-22: the input data was limited to:

- Infrastructure projects: Capacity scenarios
- Demand scenarios
- Supply scenarios

> With the introduction of the ESW CBA, additional data is required:

Prices:

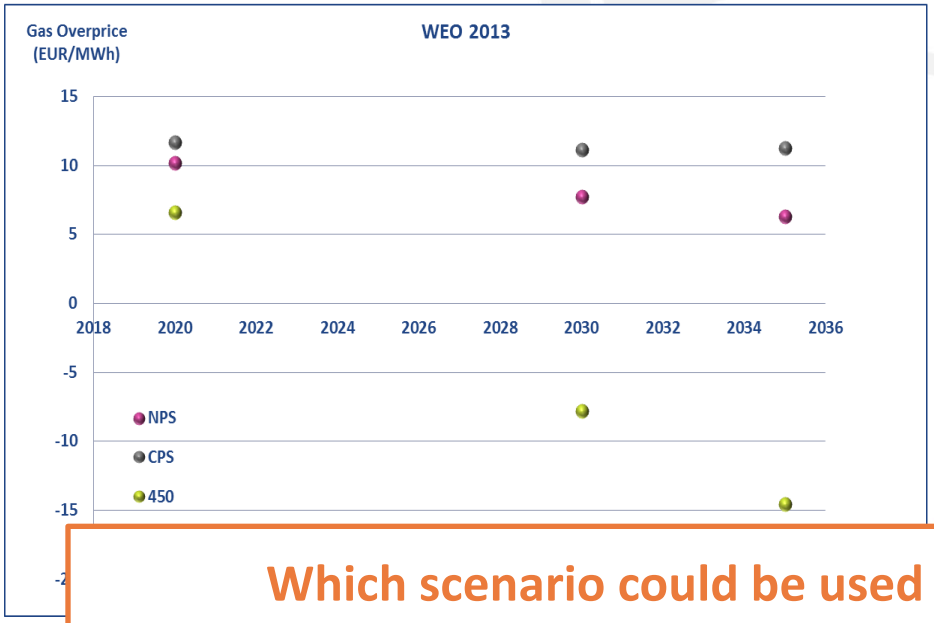
- Gas price scenario/s
- Coal price scenario/s
- CO2 price scenario/s
- Oil price scenario/s

Other:

- Physical constants
- Social discount rate
- Cost of disruption

Prices

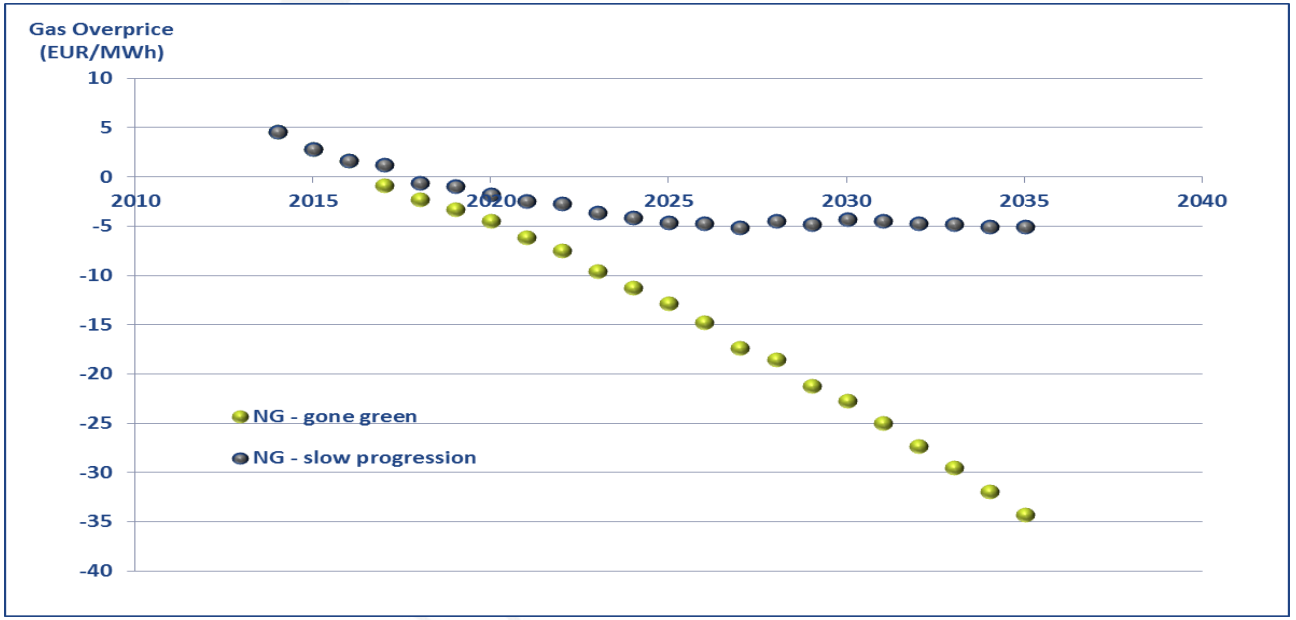
- Prices (gas, coal, oil and CO2) are a crucial input for TYNDP 2015 and the CBA
- Scenarios should be well balanced and should therefore capture a wide range of possible future prices
- If the high use of coal in power generation is the shared concern for many European stakeholders and institutions, the use of the 450 WEO scenario would mean that nothing is done to remedy that situation by 2025.



Which scenario could be used to replace WEO 450 until 2030?

A possible alternative for Europe

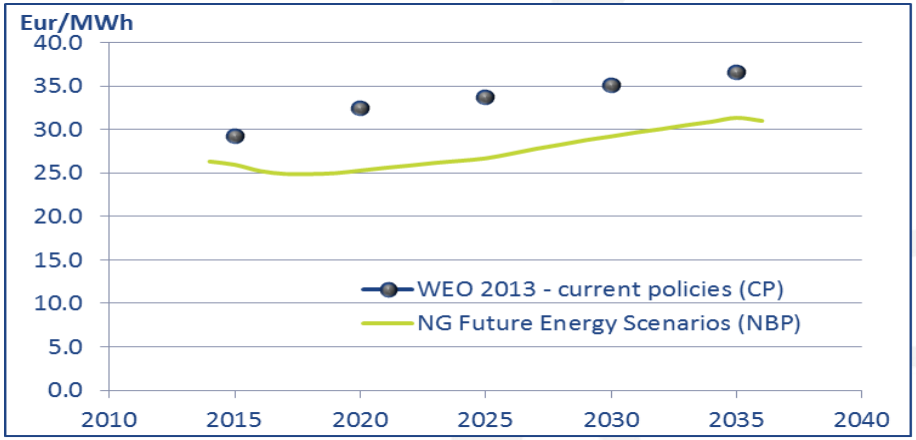
- Gas overprice in the National Grid price scenario could be more favorable for the short-term…

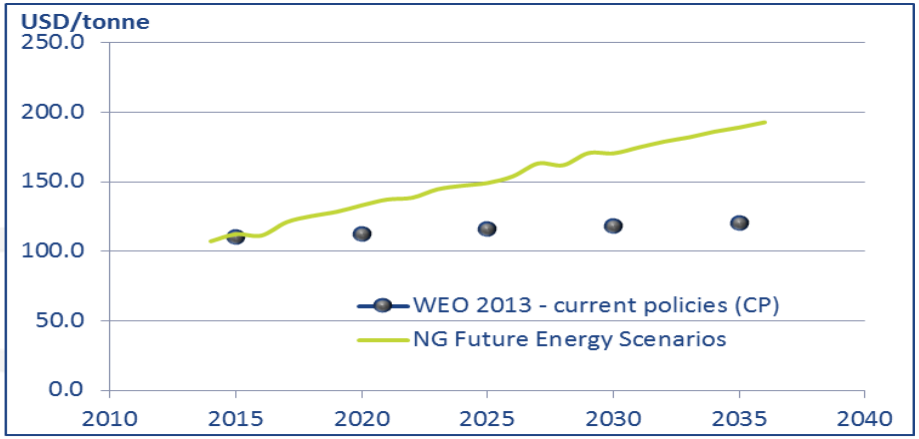


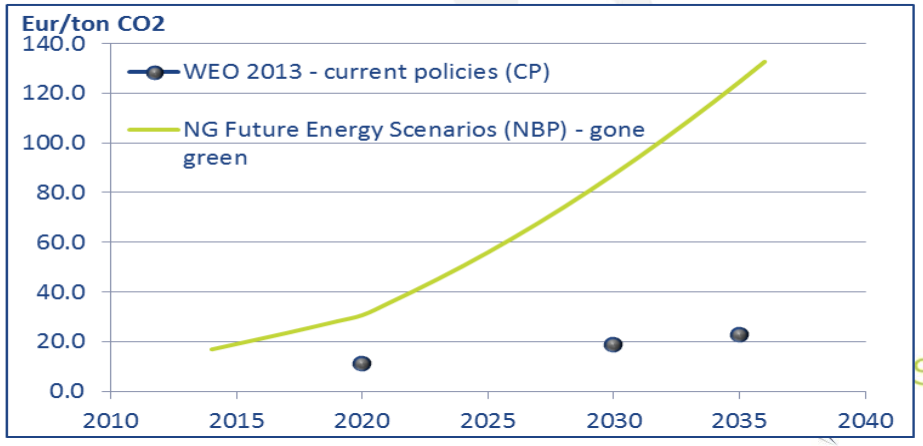
- these scenarios include a carbon tax in place partially justified by the malfunctioning of the ETS

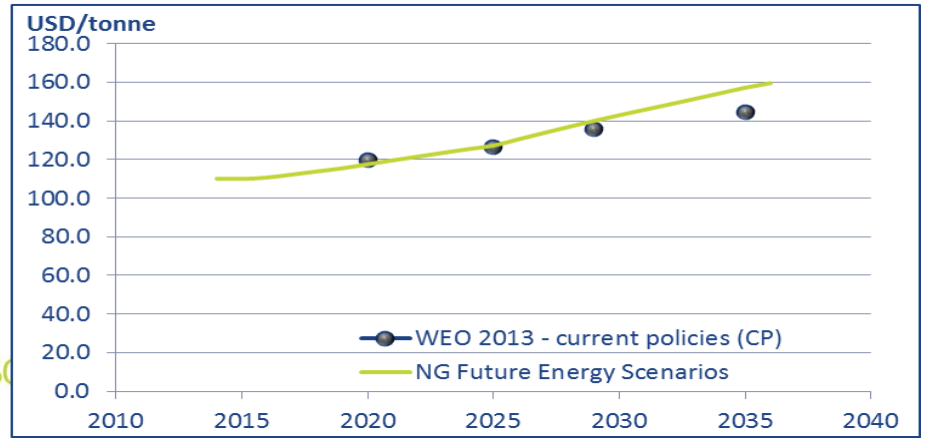
Prices (3 of 3)

- No perfect approach:
  - Potential inconsistency by mixing European scenarios with National ones
  - It is the only one providing a wide range of market conditions.









Input Data – Physical Constants

IPCC Guidelines for National GHG Inventories – used as source

Also used for UN to collect and forecast CO_2 emissions from Member countries

Microsoft Excel Worksheet

	Effective CO2 emission factor (kg/TJ)		
	Default Value	95% confidence Interval	
		Lower	*Upper*
Crude Oil	**73.300**	**71.100**	**75.500**
Gasoline (motor)	69.300	67.500	73.000
Shale Oil	**73.300**	**67.800**	**79.200**
Gas/Diesel Oil	74.100	72.600	74.800
Anthracite	98.300	94.600	101.000
Coking Coal	**94.600**	**87.300**	**101.000**
Other Bitomenous Coal	94.600	89.500	99.700
Lignite	**101.000**	**90.900**	**115.000**
Oil Shale and Tar Sands	107.000	90.200	125.000
Brown Coal Briquettes	97.500	87.300	109.000
Natural Gas	**56.100**	**54.300**	**58.300**
Biodiesel	**70.800**	**59.800**	**84.300**
Gas Biomass	**54.600**	**46.200**	**66.000**

	Default NCVs and Lower and Upper Limits of the 95% Confidence Intervals		
	NCV (TJ/Gg)	*Lower*	*Upper*
Crude Oil	**42,3**	**40,1**	**44,8**
Gasoline (motor)	44,3	42,5	44,8
Shale Oil	**38,1**	**32,1**	**45,2**
Gas/Diesel Oil	43,0	41,4	43,3
Anthracite	26,7	21,6	32,2
Coking Coal	**28,2**	**24,0**	**31,0**
Other Bitomenous Coal	25,8	19,9	30,5
Lignite	**11,9**	**5,5**	**21,6**
Oil Shale and Tar Sands	8,9	7,1	11,1
Brown Coal Briquettes	20,7	15,1	32,0
Natural Gas	**48,0**	**46,5**	**50,4**
Biodiesel	**27,0**	**13,6**	**54,0**
Gas Biomass	**50,4**	**25,4**	**100,0**

Decision is needed on which 'coal' to use

In the modelling approach, the usage of Natural Gas (also shale), Bio-gas, Coal and possibly oil is foreseen.

Social discount rate

- Low SDR is a way to favor long term benefits when High SDR goes in favor of projects bringing early benefits.
- A single SDR across Europe ensures the absence of discrimination based on the level of economic development of EU countries.
- According to literature SDR ranges between 3.5 and 5.5 %.
- ENTSOG has proposed a **4.5%** value in the methodology published 15/11/13