



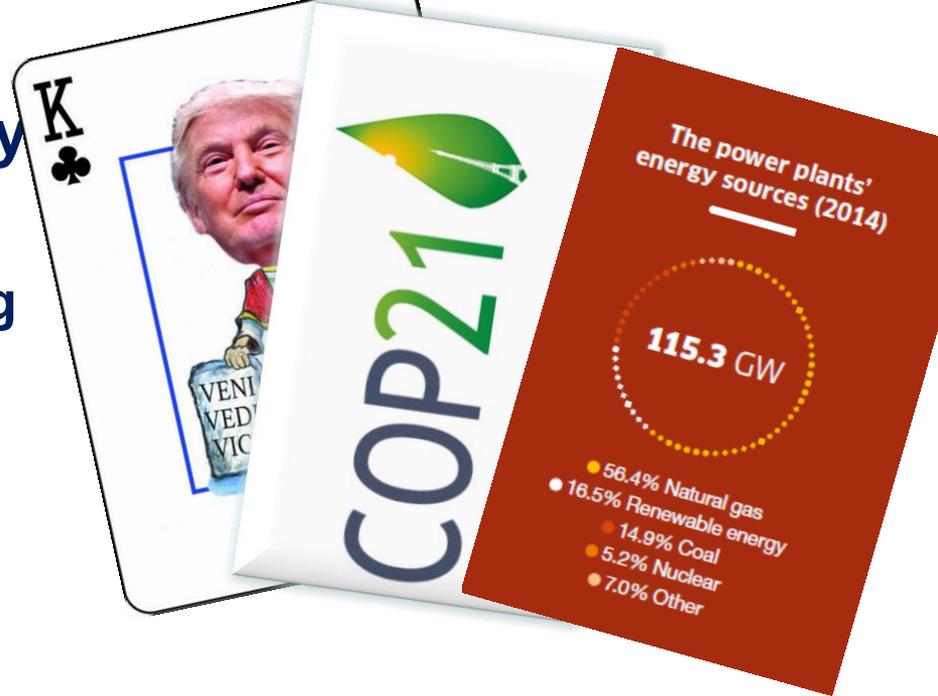
Ukraine's partner in the Energy Transition ?

Willem Coppoolse
Kiev, 12 October 2016



Energy transition is the real trump for UA independency and economy

COP21 signed by Ukraine on 22/9 entering in force on 4/11 aims -1,5°C global warming



ENGIE & COP21 Reference points and language

ENGIE's commitments

ENGIE, which is aware of its responsibility and of the major role that it is required to play in the transition to a low-carbon economy, agrees with the need for a global climate agreement in order to limit global warming to 2°C by 2050.

1

10% reduction in its CO₂ emissions ratio

ENGIE will reduce the CO₂ emission rate per kilowatt hour by 10% across its entire installed power and heat generation capacity worldwide between now and 2020. This approach will amount to a 10% "greening" of an **energy mix that is already 20% cleaner than the world average.**

Replacing the power stations that emit the most greenhouse gases by more effective units will make a specific and significant contribution to that goal.

2

Massive development of renewable energies

ENGIE has increased the percentage of renewable energies used at its power plants throughout the world by 50% since 2009. In addition, 2.1 GW of renewable energy power generation facilities were under construction throughout the world in mid-2015. **In Europe, the aim is to double installed renewable energy capacity over the next 10 years,** in order to reach 16 GW by 2025.

From now on, all the Group's new projects will use low-carbon or carbon-free technologies.

3

Ending further development in the coal sector

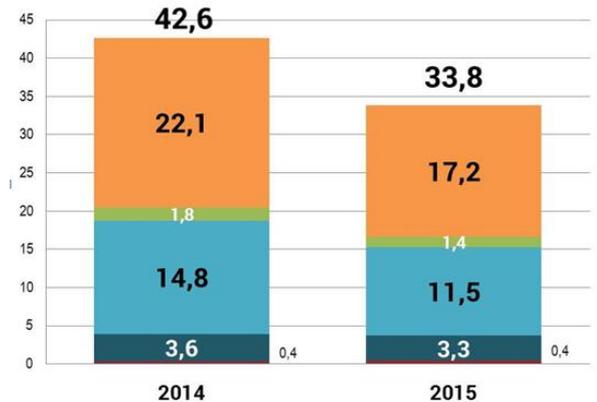
At its last Board of Directors' meeting in October 2015, ENGIE decided that the Group would not pursue any further developments in the coal sector, although it would honor any commitments that have already been made. This decision is in keeping with the reviews conducted within the **Magritte Group** of European Electricity Companies over the past few years and with the **Carbon Pricing Leadership Coalition** led by the World Bank.

4

Improving the energy efficiency of the real estate portfolio

As a global leader in energy services, ENGIE is applying its energy-efficiency expertise to its own real estate portfolio. It has committed to reducing the primary energy consumption of its real estate portfolio in France and Belgium by 40% between now and 2020 (these two countries account for 80% of the total portfolio).

Gas consumption in Ukraine 2014 - 2015, bcm



Engie is a real global energy player, aiming:

1. To become the benchmark utility in emerging countries
2. To be the leader of energy transition in Europe

- **€69.9 billion** in 2015 revenues.
- Operations in **70 countries**.
- **No. 1 independent power producer** in the world
- **Natural Gas: No. 3** seller in Europe (and no 1 to Ukraine)
- **LNG: No. 1 importer** of LNG in Europe
- Energy services: No. **1 supplier of energy efficiency services** in the world
- **152,900** employees throughout the world
 - inc. **58,200** in power and natural gas
 - and **94,700** in energy services.
- **€6-7 billion** of net investment per year over 2014-2016.
- **900** researchers and experts at **11** R&D centers.



Isabelle Kocher CEO

ENGIE's ambition: to be a leader in energy transition

Strong industrial base and expertise in Continental Europe

Key figures*

7224 MW Installed Capacities

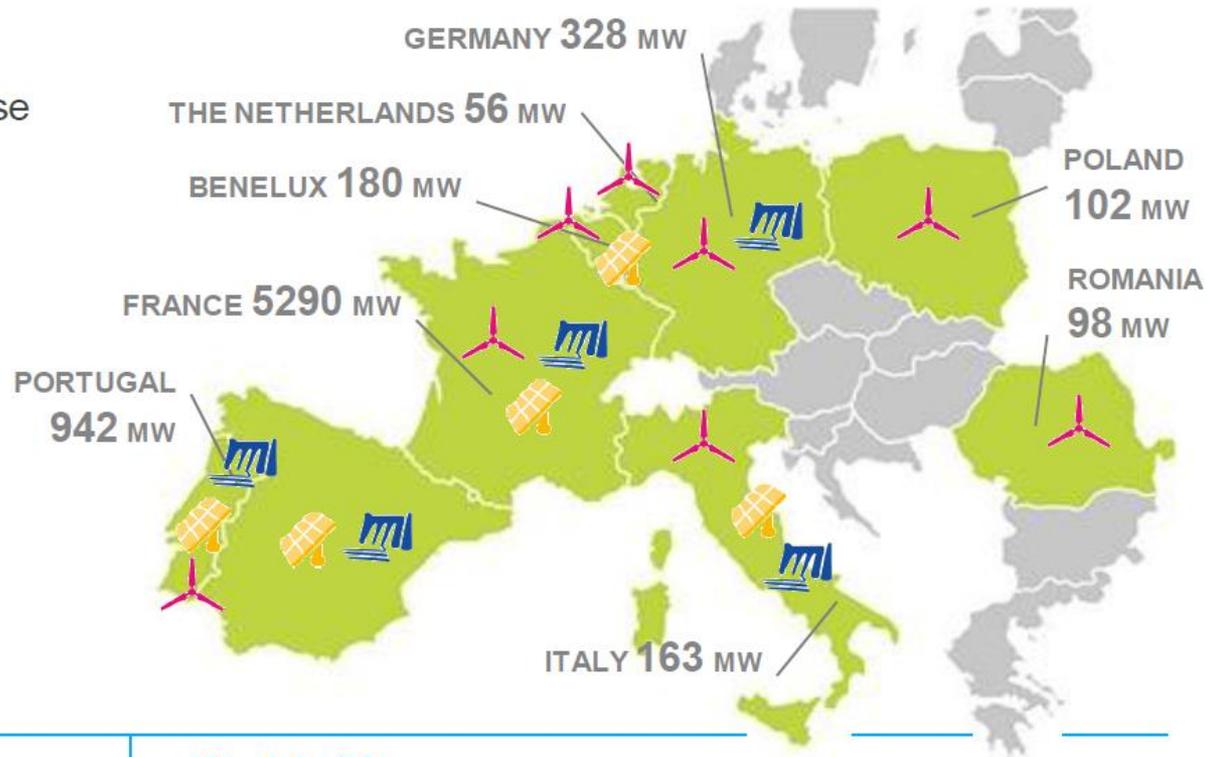
 4043 MW

 3019 MW

 148 MW

22.3 TWh Production

* Figures as of 31.12.2014 / Installed capacities at 100%



In France and in Belgium



n°1 in solar and wind production in France and the leader in Belgium for Wind

Worldwide

 **HYDRO-ELECTRIC** 13557 MW

 **SOLAR** 201 MW

 **WIND** 4318 MW

 **BIOMASS & BIOGAS** 950 MW

Ukraine has game changing obligation for Energy Transition

- ***Ukraine is 3 to 4 times more energy intensive than most developed countries, with historic dependency on Russia***
 - CO2 emissions/GDP are in world top 5
 - Natural gas (36% partly imported), coal (31% mainly local local) are main fuels, with nuclear 19% and oil 12%, RES only 2%, standstill since 2013 due to conflict and economic crisis
 - IREN Remap Study 2015: 'high potential for energy efficiency and RES, especially biomass... for power production and district heating'.
- ***Strong investment needed to reconvert obsolete thermal (coal) generation park:***
 - Coal based power generation makes up 40% of market but is obsolete: all 110 units built in 1960-70's and only 20 have been retrofitted so far. Only option is to run these plants as long as possible while preparing new investments, including a large portion of RES
 - RES Law (ambition 11% by 2020), with focus on Wind and Biomass (FiT @ 124 €/MWh for 20 years).
 - Biomass potential is huge in Ukraine, currently the country is exporting majoriy of its wood pellets/briquettes



Gas Market reforms show the path, but the road is still long.

Engie is already a major partner in gas diversification

- **Gas Market reforms show that Ukraine can reform even one of its most complex economic sectors:**
 - *Some battles have been won (tariffs, diversification, Gas Law....), some ongoing (supply & transit arbitrage, increase production...) some still ahead (TSO/SSO, retail market opening....)*
 - *'New' regulator should develop a real vision on market functioning and customer protection, no extra red tape as in some markets*
 - *Entry of EU players on the Ukrainian market is conditioned by clear, stable regulatory, fiscal and legal environment and market level playing field. Their financial strength will support the development of the Ukrainian market and enable investments*

Lots of issues are still scaring away investors, however:

- *Unstable political environment, war....*
- *Currency control, dividend constraints, VAT process....*
- *Very bad image due to long history of corruption, short term/opportunistic behaviour....*

The only way is forward

