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From old utility to new niche player: challenges and options
Luc Poyer – Uniper France chairman

Chaire European Electricity Market, 27/09/2017

## « We know what we are not anymore, we do not know yet what we will be. »

Utilities are considered as deeply challenged by the 3D revolution:

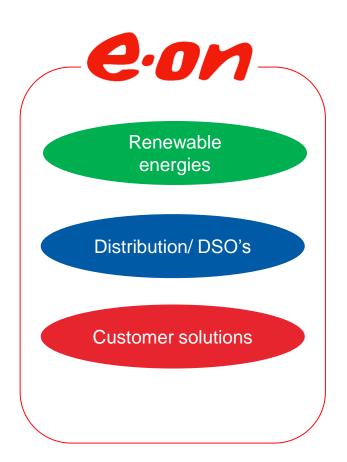
- Decarbonization
- Digitalization
- Decentralization
- 1. Uniper group: successful launching of a new player focused on energy security of supply
- 2. Uniper France: decarbonization and innovation to better serve our clients and integrate renewables
- 3. Exploring new territories: bio-energy, a major renewable energy. The Provence 4 Biomasse case.



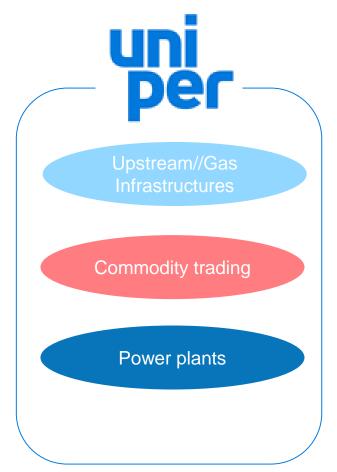


1. Uniper group: successful launching of a new player focused on energy security of supply

#### E.ON/Uniper: a "tale of two utilities"



Integrate customers at the heart of energy solutions



Reshape conventional energy world



#### Focused portfolio with attractive assets across Europe and Russia

European Generation



- One of the largest European generators with 31 GW of own, mostly dispatchable generation capacity
- Diversified base across technologies and main NWE markets
- Strong capabilities in construction, operations and maintenance



Global Commodities



- A leading physical energy trader with global footprint
- Large gas midstream business in Europe with more than 400 TWh gas LTC portfolio, own storage capacity of 8.8 bcm and pipeline shareholdings
- Participation in giant Russian gas field
- Optimisation of European Generation portfolio

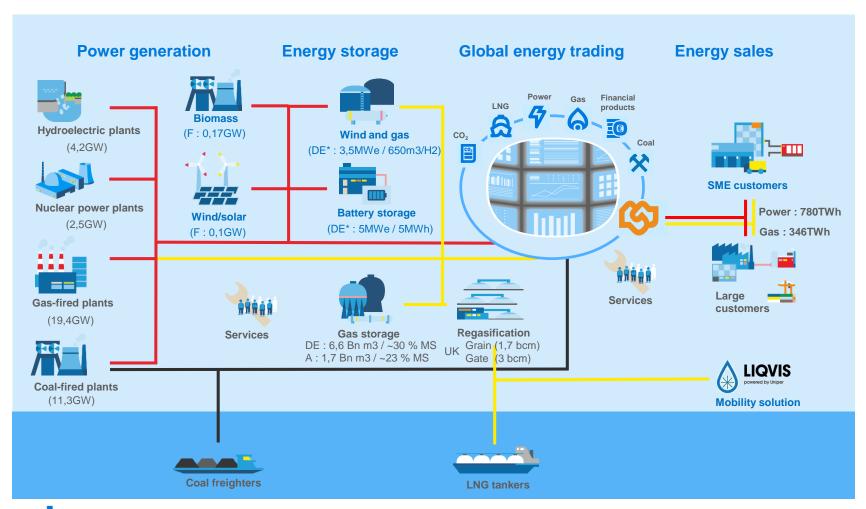
International Power



- Number 3 privately-owned Russian generation company
- ~30% capacity increase since 2010
- 11 GW of generation assets



#### Security of supply and flexibility in our DNA



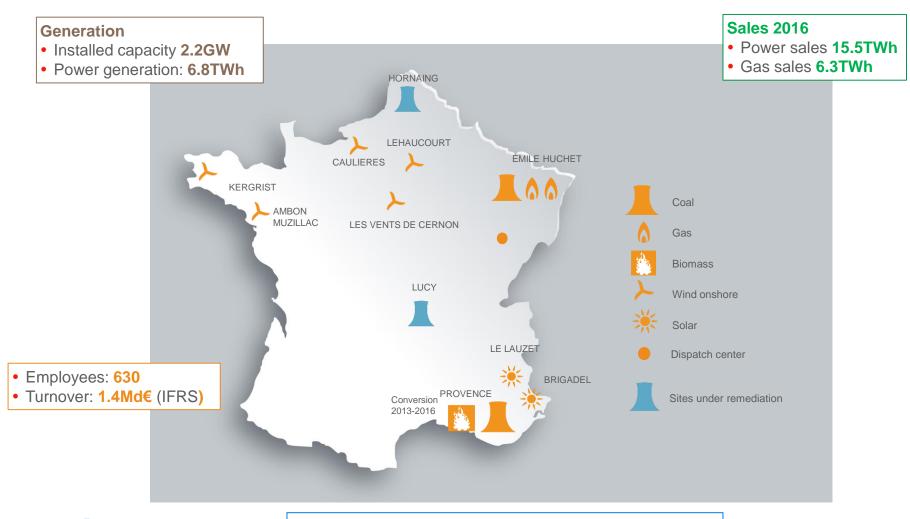


Uniper assessment: 2015



2. Uniper France: decarbonization and innovation to better serve our costumers and integrate renewables in the power system

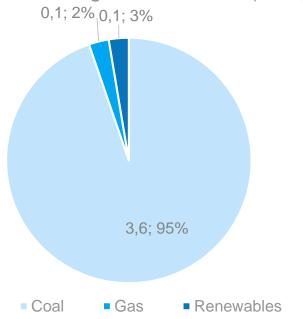
#### Overview of Uniper's business activities in France



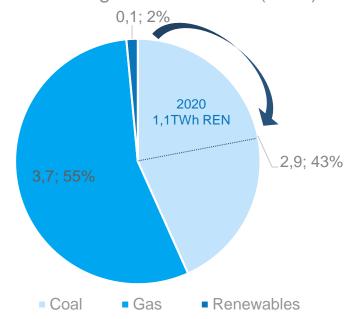


- 3rd power producer
- 2nd power supplier in I&C and SME
- 7,5% of the French decarbonization effort (2008-2016)

#### Uniper France, pioneering energy transition



Uniper France generation 2009 (TWh) Uniper France generation 2016 (TWh)



#### An unprecedented wave of transformation

- **Eur 1 billion invested** since 2008 in France for the transformation of the firm and the decarbonation of our activities
- Our CO2 emissions divided by 2 which amount to 7.5% of the national effort over this period
- Unprecedented early investment in France's main natural gas production unit, in wind and solar power and also in the conversion of a coal-fired unit to a wood-fired unit



### From centralized to decentralized: Uniper's dispatch center optimizes a ~3GW diversified portfolio

REN Generation (~300 MW)







CCGT, coal (2GW)



I&C Consumption (~600 MW)

Industrial sites



Interco : France Angleterre (IFA &IFA2) ; France - Deustchland...







## Challenge: accompany renewable producers to direct marketing

RES assets are becoming exposed to market prices and imbalances

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Early 2012, FIP have been setting up in Germany. Incentive prime (up to 12€/MWh) for switching. 30 GW aggregated in 1 year.

Uniper valorizes RES assets, and allows them to benefit from:

- Limited imbalance penalties thanks to the size and the diversity of its portfolio
- Anticipation of negative market prices, and a 24/7 reactivity
- Support along all procedures with RTE and the opportunity to valorize assets on grid services



Uniper developed partnerships with start-ups







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#### **Activities and specificities**

- Wind power forecasting
  - Set-up, test and performance measurements to meet the user's individual requirements
  - Reduce the uncertainties
- Solar production forecasting
  - All solar resources
  - Time horizons of a few minutes to a few days

## Uniper supports RES producers to integrate their assets into the French energy system



Cestas PV farm, 300MW, Gironde, France

#### Power scheduling

D-1 and ID forecasting of Wind and Solar generation

24/7/365 power schedule coordination with TSO and DSO



#### 24/7 flexibility management

Bidding offers as well as receiving activation orders from TSO/DSO

Coordination with TSO/DSO and O&M manager

Remote control for curtailement

#### Safety regulation management (SAS)

24/7 safety communication with TSO through dedicated and secured IT

Coordination with TSO/DSO and O&M manager

#### Real-time management

Real-time generation monitoring

Planned outage management

Balancing management

Coordination with TSO/DSO and O&M manager

#### Real-time 24/7 HSE monitoring

24/7 monitoring of who enters and exits a remote generation site

Procedure to trigger HSE procedures

ICPE regulation compliance



3. Exploring new territories: bioenergy, a major renewable energy. The Provence 4 Biomass case.

## Provence 4 Biomass, a major project for renewable energy in France

Bouches-du-Rhône (Provence-Alpes-Côte d'Azur)







#### **Installed capacity of 170 MW**

- 300 million euros invested in the transformation of a coal plant to biomass.
- 850,000 tons of renewable bio-fuel per year
- Create 450 local jobs contributing to the structuring of local forestry sector.
- Production equivalent to the electricity supply to 440,000 households (1/6 of PACA region).

#### **Technical characteristics**

**Steam**: 565°C / 165 bars

Planned production: 1125 GWh (7500hr)

CO2 reduction target: 600 kt/year



#### P4b - Design basis: fuel basket 2017-2018

Thermal input to the boiler: 48% imported biomass and coal + 52% local biomass

(13% = 137kt)

Total annual biomass consumption is approx 850kt

(15% = 168kt)
Local
French
Forestry:
Woodchip &
Roundwood



(11% = 85kt) Recycled woodchips: Class A & Class B

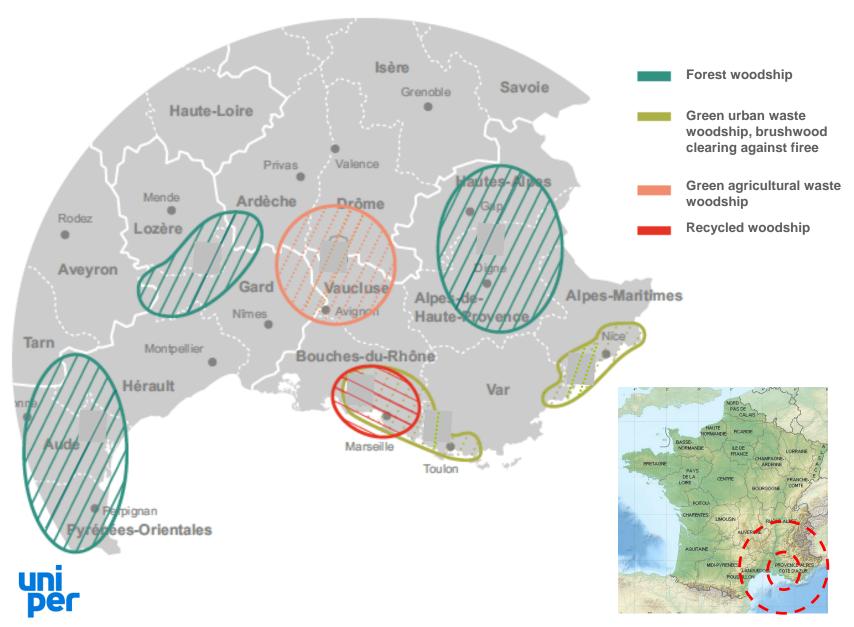
(48% = 467kt)
International
woodchips
Global origin,
Quality
PEFC & FSC
labels





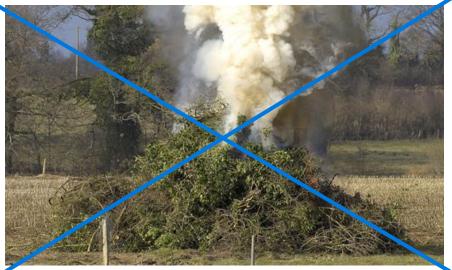


#### Where does the local bio-fuel come from?



#### Local green waste exemple







Local green waste harvesting and crushing:
windbreak hedgerows
(basse vallée du Rhône)

#### Conclusion

New utilities are part of the solution to a challenging equation :

« Energy Transition » = « 3D + 3F + 3M »

3D ( « new world »)

Digitalization

Decarbonization

**Decentralization** 

3F ( « conventional world »)

Functional safety

**F**lexibility

**F**undability

3 Markets' designs

Electricity Market
Carbon Market
Capacity Market

