# 2019 Gas/Electric Partnership Conference

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# ENGIE Key Facts

Global leader in independent power production and energy efficiency services

**150,000**
Employees worldwide

**70**
Countries around the world

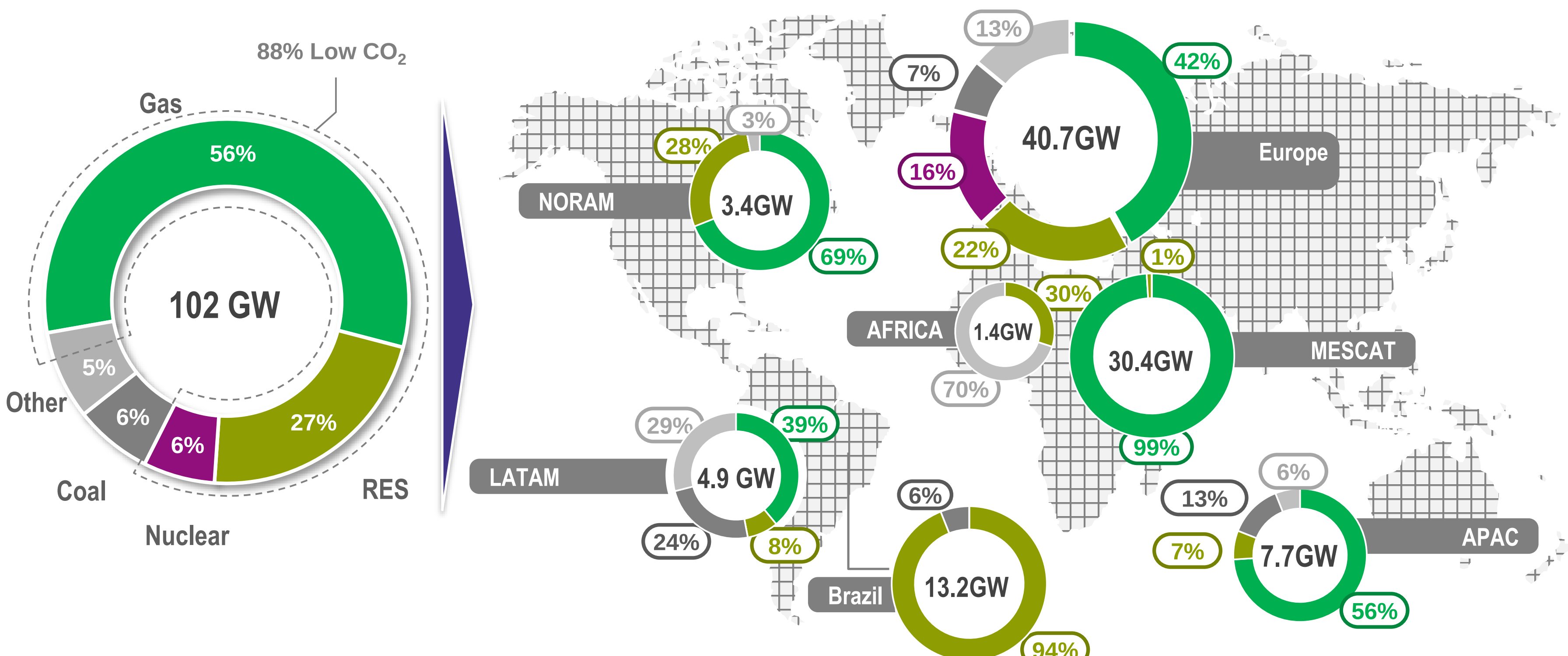
**$73B**
Revenues in 2017

**11**
R&D centers

## ENGIE North America

- Energy and Sustainability Management
- Energy Efficiency Project Implementation
- Energy Storage
- Energy Supply

# ENGIE'S Generation Footprint (June 2018)



# An Energy Revolution Is Here

The new energy world is characterized by **decarbonization**, **decentralization** and **digitalization** (the 3 “Ds”).

**DECARBONIZATION**

Worldwide renewable energies: annual additional capacity to grow by +70% in 2030 vs 2015

**DECENTRALIZATION**

Decentralized solutions to more than double by 2030

**DIGITALIZATION**

Digital changes energy systems and improves customer offers

# WHY THE CHANGE?

- Structural Shift in the European Energy Market
  —Renewable energy subsidies
  —50K MW's of gas-fired capacity retired
  —Increased demand for decentralized renewable energy

- Climate change policies

- Since 2013
  —$30b ENGIE asset write down

# ENGIE NORTH AMERICA SHIFT

- Divestment of Merchant Power Assets
  — 1,400 MW of pumped storage and hydro assets sold in 2016
  — 8,200 MW of thermal (mostly gas) assets sold in 2017
- Investment in Renewable Energy
  — Infinity – Wind developer w/ 8,000 MW of projects
  — SoCore – Solar developer
- Investment in Energy Storage
  — GreenCharge Networks
- Energy Efficiency and Services
  — Ecova – Energy management
  — OpTerra – Energy management
  — Talen Energy Serices, Donnelly, PBW, Unity – Mechanical contractors / energy management

# TROUBLE IN THE WHOLESALE POWER MARKETS

- “Competition” Isn’t Playing Out As Planned …..
  - —Price Caps
  - —Missing Money
  - —Capacity Markets
    - Exceptions
    - Minimum Offer Price Rules
    - Litigation

- Subsidies and Public Policy Preferences Abound
  - —Nuclear
  - —Coal
  - —Solar
  - —Wind
  - —Storage
  - —Demand Response / Efficiency

# WHERE IS THIS GOING?

Current Wholesale
Market Structure

Eroding

ISO / RTOs
As the Integrated
Resources Planner

Attempts to Mimic
Some Competitive
Elements

"Attributes" Market

Reliable
Clean
Responsive