



# New opportunities for pipeline contractors in the energy transition era

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# Objectives

- The EU strategy to be climate-neutral by 2050
- Pipeline installation vs high voltage/medium voltage (HV/MV) cables installation, process comparison
- Suitable machinery for undergrounding HV/MV cables
- Conclusion

The EU strategy to be climate-neutral by 2050







# The EU strategy to be climate-neutral by 2050



## The status quo is not an option<sup>\*</sup>

The EU aims to be climate-neutral by 2050 – an economy with net-zero greenhouse gas emissions. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement.

This change is possible and opportune.  
Limiting global temperature increase to 1.5 °C is doable, provided we act now and coherently use every tool at our disposal.

<sup>\*</sup> *Communication from the Commission to the European Parliament, The European Council, The Council, The European Economic and Social Committee, The Committee of Regions and the European Investment Bank, Brussels, Nov. 28, 2018 - COM(2018) 773 final.*



# The EU strategy to be climate-neutral by 2050



The transition towards a net-zero greenhouse gas economy gives **energy** a central role as it is today responsible for more than 75% of the EU's greenhouse gas emissions.

# The EU strategy to be climate-neutral by 2050



**The road to a net-zero greenhouse gas economy could be based on joint action along a set of seven main strategic building blocks**

1. Maximize the benefits from energy efficiency including zero emission buildings
2. Maximize the deployment of renewables and the use of electricity to fully decarbonize Europe's energy supply
3. Embrace clean, safe and connected mobility
4. A competitive EU industry and the circular economy as a key enabler to reduce greenhouse gas emissions
5. Develop an adequate smart network infrastructure and interconnections
6. Reap the full benefits of bioeconomy and create essential carbon sinks
7. Tackle remaining CO<sub>2</sub> emissions with carbon capture and storage (CCS)

# The EU strategy to be climate-neutral by 2050



Opportunities for pipeline contractors

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# The EU strategy to be climate-neutral by 2050



**2. Maximize the deployment of renewables and the use of electricity to fully decarbonize Europe's energy supply**

**Today the major part of the energy system is based on fossil fuels.**

FOSSIL

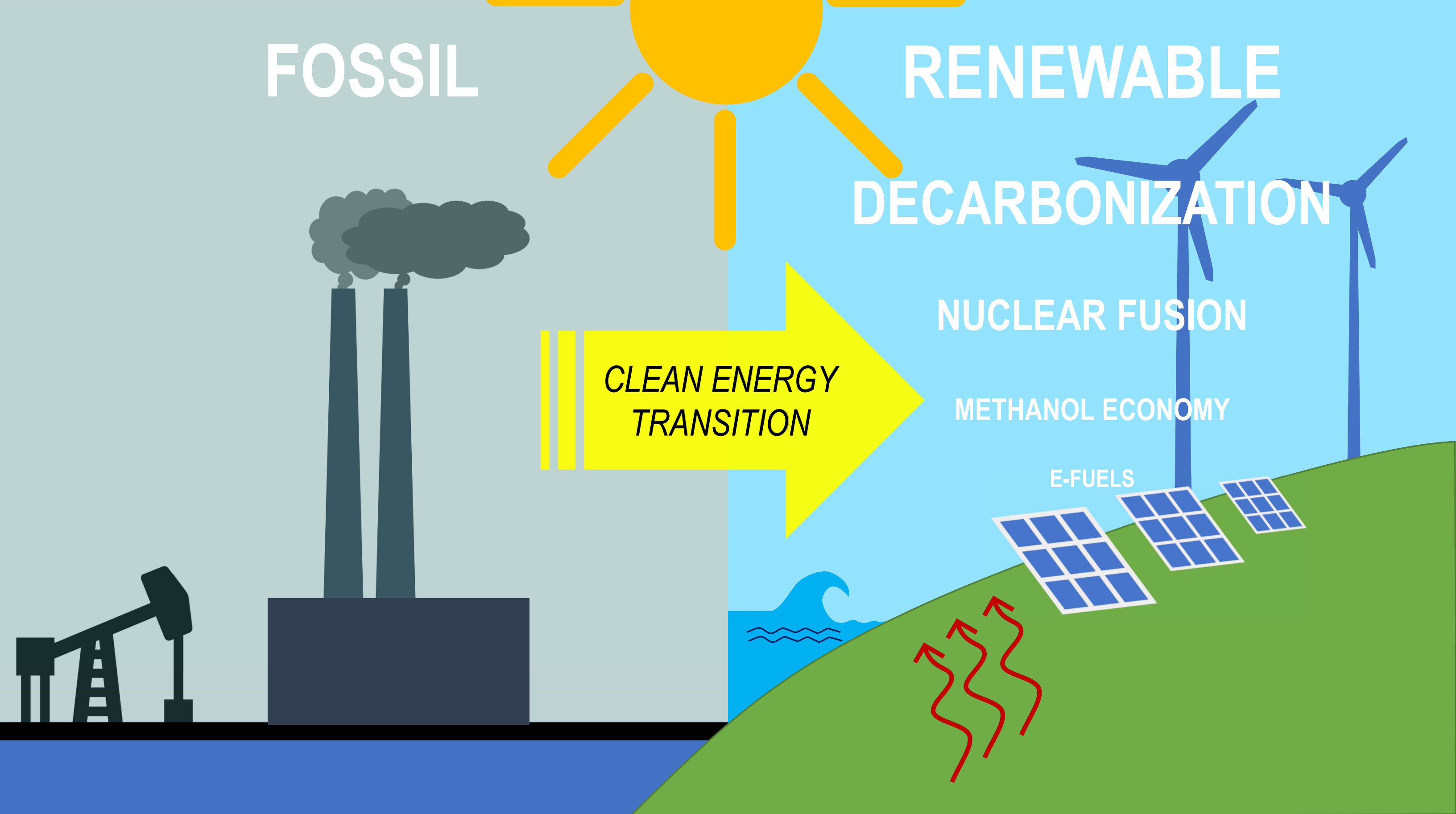
RENEWABLE  
DECARBONIZATION

*CLEAN ENERGY  
TRANSITION*

NUCLEAR FUSION

METHANOL ECONOMY

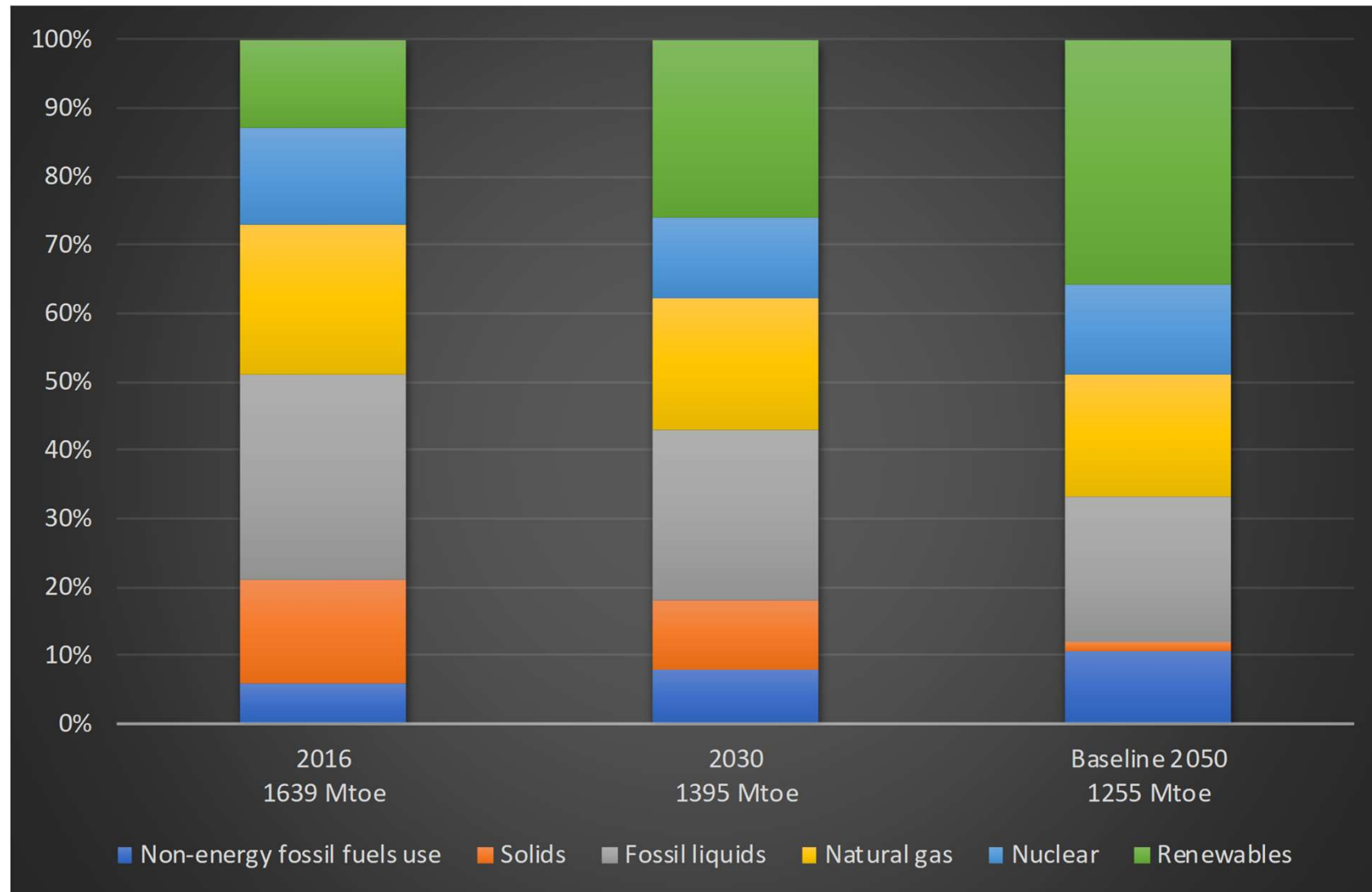
E-FUELS



# The EU strategy to be climate-neutral by 2050



## 2. Maximize the deployment of renewables and the use of electricity to fully decarbonize Europe's energy supply



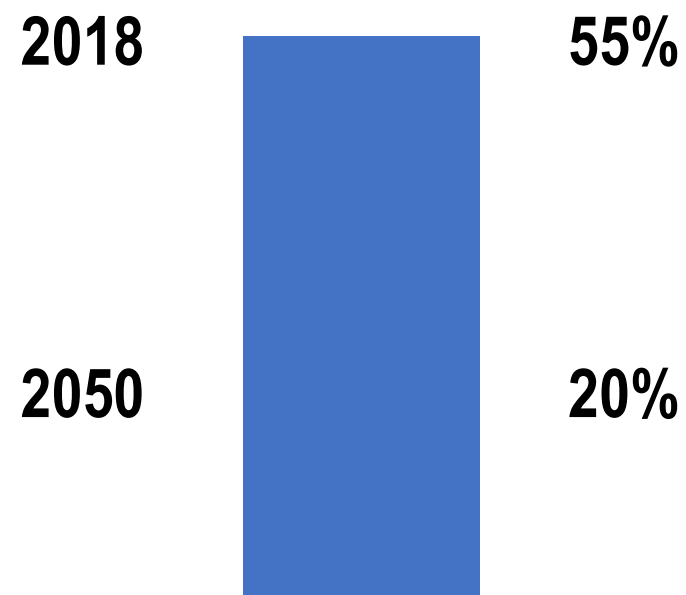
The **clean energy transition** would result in an energy system where primary energy supply would largely come from renewable energy sources.

# The EU strategy to be climate-neutral by 2050

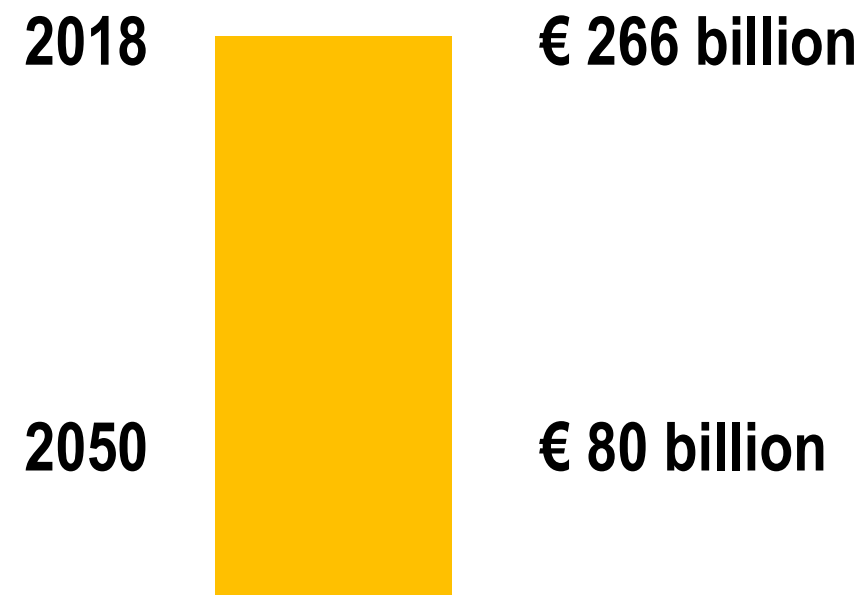


## 2. Maximize the deployment of renewables and the use of electricity to fully decarbonize Europe's energy supply

### Europe's energy import dependence



### EU import of O&G



### Cumulative savings

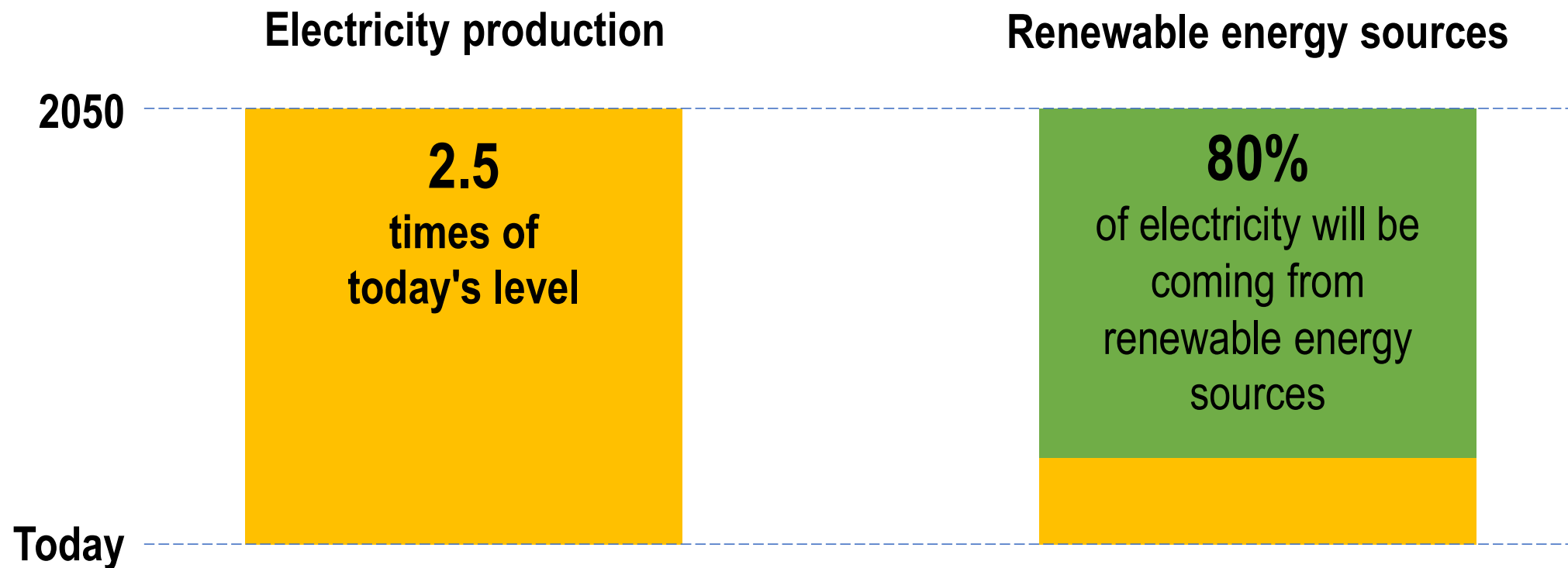
From a reduced import bill will amount to € 2-3 trillion over the period 2031-2050, freeing resources for further potential investments into the modernization of the EU



# The EU strategy to be climate-neutral by 2050



## 2) Maximize the deployment of renewables and the use of electricity to fully decarbonize Europe's energy supply



By 2050, electricity production will increase substantially to achieve net-zero greenhouse gas emissions, up to 2.5 times of today's levels depending on the options selected for the energy transition.

By 2050, more than 80% of electricity will be coming from renewable energy sources (increasingly located offshore). Together, with a nuclear power share of 15%, this will be the backbone of a carbon-free European power system.

# The EU strategy to be climate-neutral by 2050



## 5. Develop an adequate smart network infrastructure and interconnections

- Smart electricity grids
- Smart data/information grids
- **Hydrogen pipelines (green and blue H, including H transformation of existing infrastructures)**

## 6. Reap the full benefits of bioeconomy and create essential carbon sinks

Biomass can directly supply heat. It can be transformed into biofuels and biogas and when cleaned can be **transported through the gas grid substituting natural gas**

## 7. Tackle remaining CO<sub>2</sub> emissions with CCS

Carbon capture and storage is still necessary, especially in energy intensive industries and in the transitional phase for the production of carbon-free hydrogen (blue hydrogen). **CCS requires new infrastructure, including related to transport** and storage networks.



# Pipeline vs cables

## Main energy carriers

### Chemical

(Fossil fuels, bio-fuels, e-fuels, hydrogen)



### Electrical



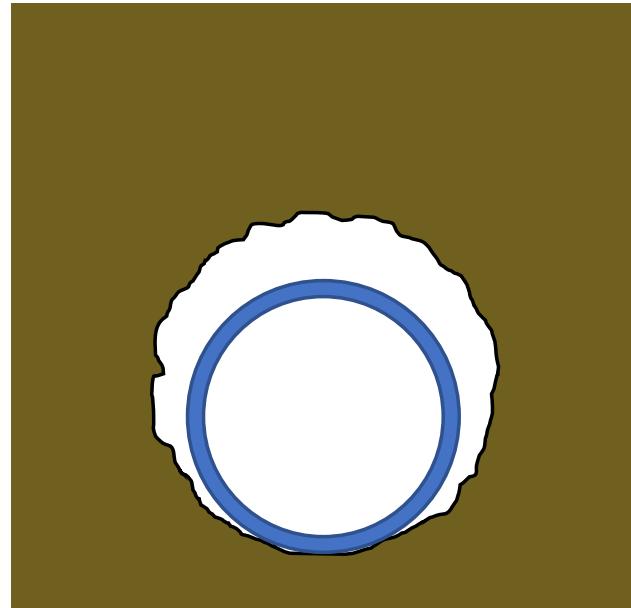


# Pipeline installation vs HV/MV cable installation

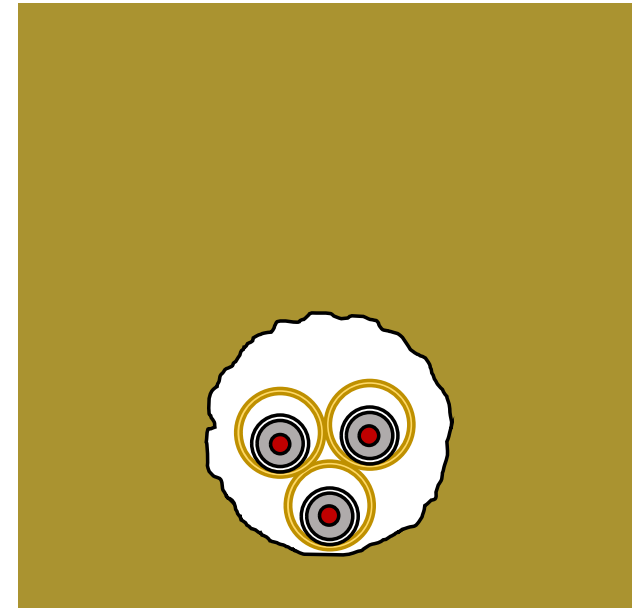
**Trenchless  
(HDD)**



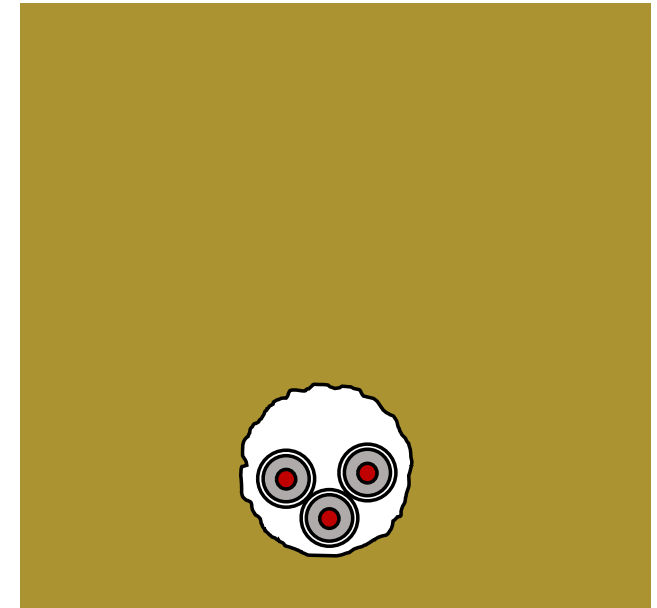
**Pipeline**



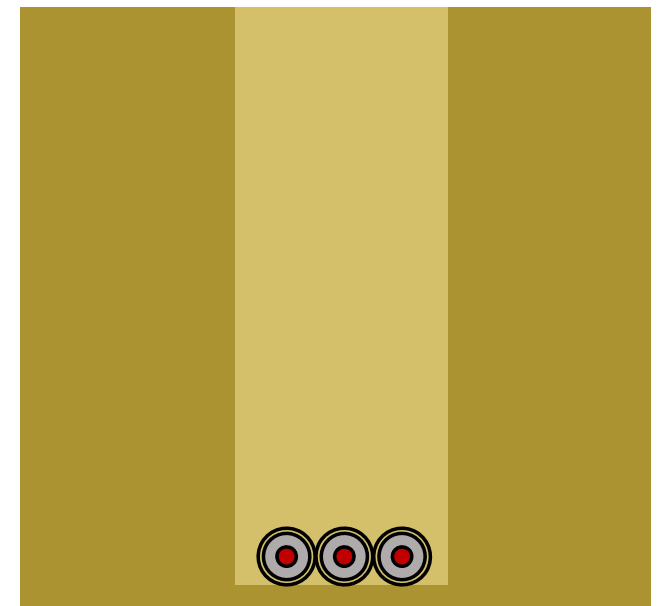
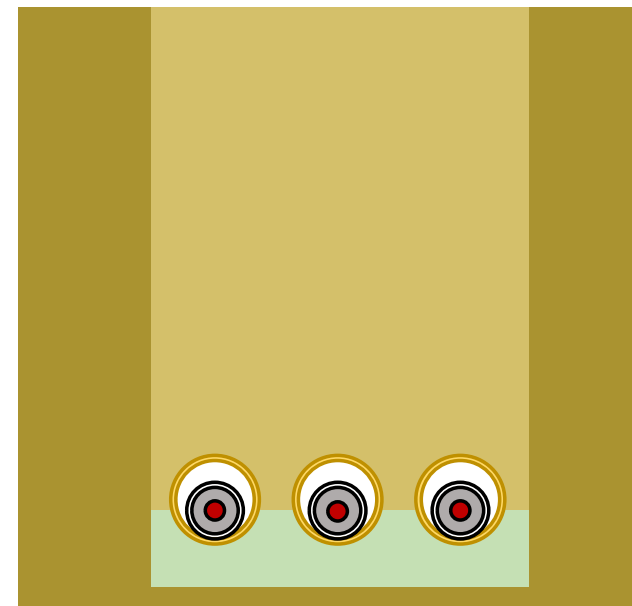
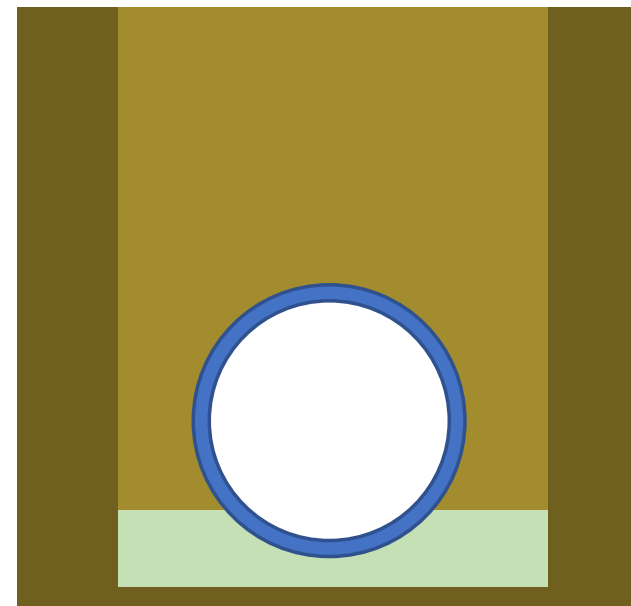
**Cable conduit**



**Cable**



**Open trench  
(pipeline trenchers)**







# Pipeline installation vs HV/MV cable installation

Trenchless  
(HDD)



Operation	Pipeline	Cable conduit	Cable
Onsite pipe inspection before installation	●		
Pipe stringing, assembling and inspection	●	●	
Coating	●		
HDD installation	●	●	●
Post installation checks on pipe	●	●	
Cable pulling into the conduit		●	

*Pipeline contractors' expertise*



# Pipeline installation vs HV/MV cable installation

## Open trench (pipeline trenchers)



Operation	Pipeline	Cable conduit	Cable
Right-of-way clearing	●	●	●
Open trench excavation	●	●	●
Bedding	●	●	●
Onsite pipe inspection before installation	●		
Pipe stringing, assembling and inspection	●	●	
Coating	●	<i>Pipeline contractors' expertise</i>	
Pipe laying (lowering)	●	●	
Cable laying			●
Backfilling and compaction	●	●	●
Post-installation checks on pipe	●	●	
Cable pulling into the conduit		●	





# Vermeer products lineup in the frame of the EU strategy

Biomass



Brush chippers

Right-of-way  
clearing

Terrain Leveler®  
(SEM)



Forestry tractors

Leveling



Pipeline trenchers



Trenching

Trenchless

HDD



Reclaimers



Rock wheels



Horizontal grinders







# Suitable machinery for undergrounding HV/MV cables

## Vermeer T655III trencher

Capable to dig a trench in soft soil as well as in rocky ground conditions

### TRENCHER ATTACHMENT

- Cutting width range: 26.7 cm – 66 cm
- Boom depth options: 1.2 m, 1.5 m, 1.8 m or 2.4 m

### ROCKWHEEL ATTACHMENT

- Max cutting depth: 1.2 m
- Cutting width range: 7.6 cm - 25.4 cm







# Suitable machinery for underground HV/MV cables

## Vermeer D220x500S3 NAVIGATOR® horizontal directional drill

Capable to drill, in soft ground conditions, up to 1,500 m distance and 1.5 m bore diameter.

### OPERATIONAL

- Thrust/pullback: 240,400 lb (1,069.4 kN)
- Maximum spindle torque low: 54,000 ft-lb (73,214.2 Nm)
- Maximum spindle speed high at maximum engine rpm: 97 rpm
- Drill rack angle: 8.5° - 17° (14.9% - 28.7%)

### DRILLING FLUID SYSTEM

- Maximum flow: 350 gpm (1,323 L/min)
- Maximum pressure: 1,200 psi (82.7 bar)





# Conclusion

- **The EU strategy to be climate-neutral by 2050 presents opportunities for pipeline contractors and owners.**
- **Opportunities are represented by the chance to include electrical cabling in the portfolio of pipeline contractors and from the need to install new pipeline and/or convert existing ones for transporting hydrogen, CO<sub>2</sub> (CCS), biofuels and biogas.**
- **From the technical standpoint, pipeline contractors have the capability to use their expertise for effectively carrying on the undergrounding of HV/MV cables.**
- **Vermeer is ready to support this global transition.**

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