

HVDC Submarine cable technology & experience in Europe

Presentation to EC DG Energy Workshop: Horizon 2050 power system and the role of HVDC technologies

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Brussels, 4 February 2020

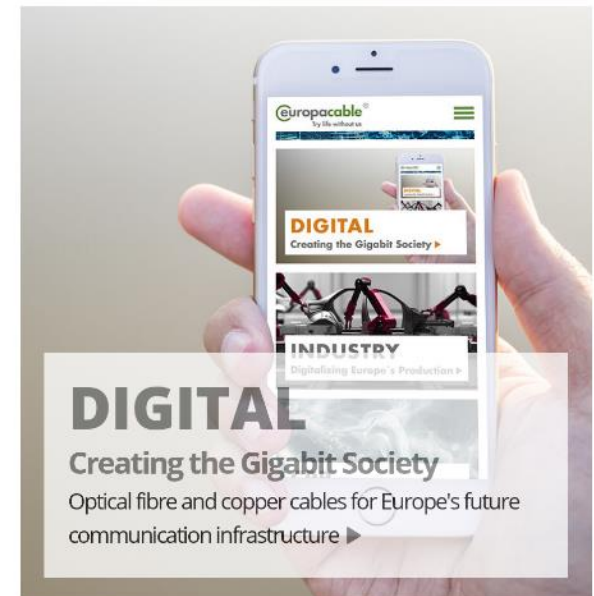
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Introducing Europacable

The voice of Europe's leading wire and cable manufacturers

- World's largest cable makers providing global technology leadership
 - Highly specialized SMEs from across Europe
 - 80.000 people globally of which some 50% in Europe
 - Over € 27 billion turnover in Europe, € 70 billion globally
- *Product scope covers full range of energy & communication cables*



Introducing Europacable

Our Members: Europe's Leading Wire & Cable Producers



Associated Industry Partner



HVDC Cable technology: Why It is Relevant for Europe

3 Core Messages:

1. HVDC EHV land and submarine cables are a mature and reliable transmission technology (in commercial operation since 1954)
2. Europe's leading cable manufacturers have sufficient capacity available to supply the projects currently in the pipeline – >40,000 km - but we need close dialogue with TSOs to ensure managing any shifts in roll out stemming from permitting or authorization delays
3. Europacable is **concerned** about potential Authorization of Lead as this would – in a worst case – prevent the production, installation and repairs of lead sheathed submarine cables in Europe as of 2024

HVDC Cable technology: 1. Mature & Reliable

European Network of Transmission System Operators for Electricity **entsoe** **europacable**[®]
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Recommendations to improve HVDC cable systems reliability

23 April 2019

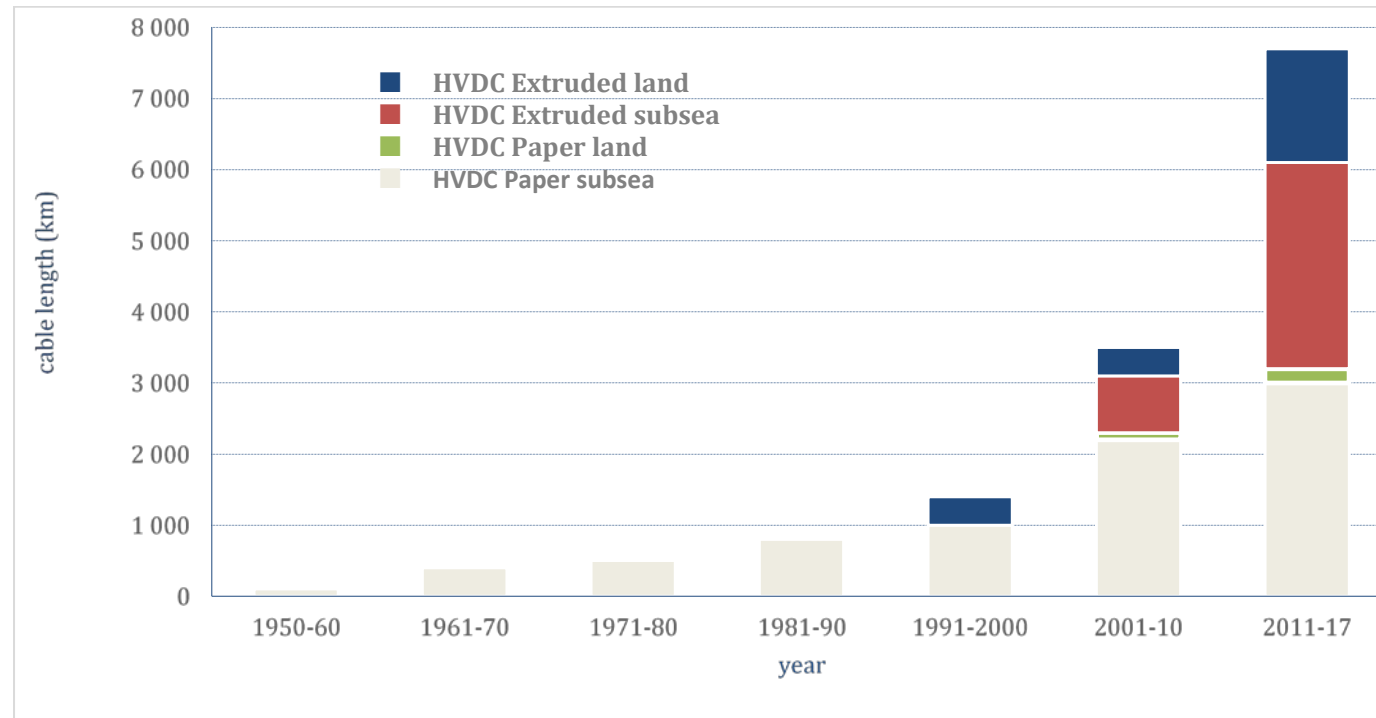
Joint ENTSO-E¹⁾ and EUROPACABLE²⁾ paper

¹⁾ European Network of Transmission System Operator for Electricity represents 43 electricity transmission system operators (TSOs) from 26 countries across Europe.

²⁾ Europacable is the voice of all leading European wire and cable producers. Europacable members include the largest cable makers in the world providing global technology leadership, as well as highly specialized small- and medium sized businesses from across Europe.

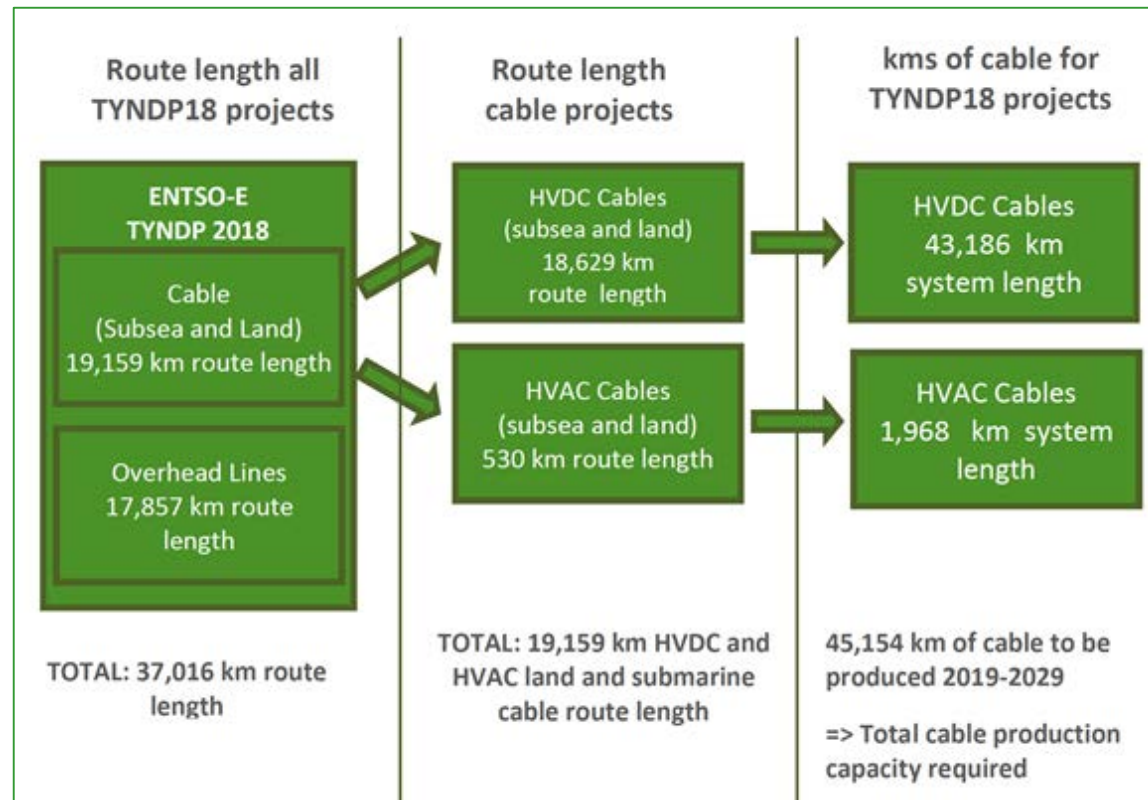
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- DC Cables installed and in operation > 14,500 km up to and incl 2017
- Several large HVDC projects with long DC cable ongoing today

HVDC Cable technology: 2. Sufficient Capacity



- *Sufficient capacity available to supply the projects currently in the pipeline*
- *BUT we need close dialogue with EC, ENTSO E, and TSOs to ensure managing any shifts in roll out stemming from permitting or authorization delays*

HVDC Cable technology: 3. Potential Lead Authorisation

- ❶ 06/18: Lead in REACH Candidate List of SVHC due to reprotoxic properties
 - ❷ Spring 2020: ECHA expected to prioritize Lead for inclusion in Annex XIV
 - ❸ If inclusion, European cable manufacturers no more able to produce lead sheathed submarine cables as of 2024 unless an exemption is granted or an authorisation is obtained
 - ❹ Lead currently used as a sheathing to protect submarine cables from water penetration & corrosion in harsh offshore environment – thus ensuring maximum reliability
- *Europacable believes that subjecting Lead to Authorisation for these applications is not warranted and that environ., economic & societal costs would outweigh benefits*
- *Europacable is **concerned** that if the inclusion of lead into Annex IX is confirmed, it means in practice that production, installation and repair of HVDC submarine cables in Europe is banned.*



HVDC Cable technology: key to decarbonise Europe

HVDC Submarine cables

- Are, and will continue to be, a fundamental pillar for the ambitious program to strengthen the interconnected system
- Will facilitate the plans for a huge increase of renewable energy sources, e.g. offshore wind, towards the goal of 450 GW in 2050
- *They are a crucial technology to ensure Europe will be meeting its offshore renewable targets as well as interconnection ambitions*



European Cable Industry: We're ready to deliver!

Know how &
Experience

Quality
Commitment

Capacity

620
Factories in
Europe alone

80.000
Employees
globally

€ 70 BN
Turnover
globally

Thank you for your attention!

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