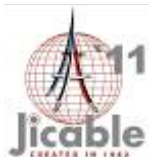


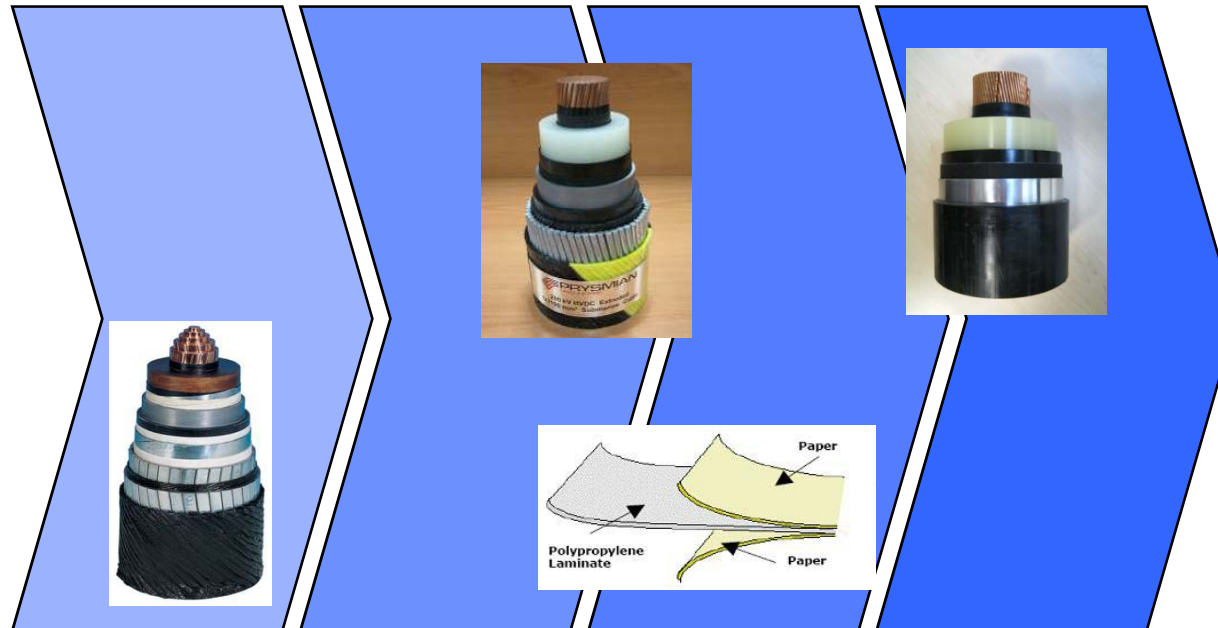
HVDC CABLES PERSPECTIVES

WHICH CHALLENGES?

Marco Marelli, Prysmian, Italy



HVDC - FAST GROWING TECHNOLOGY



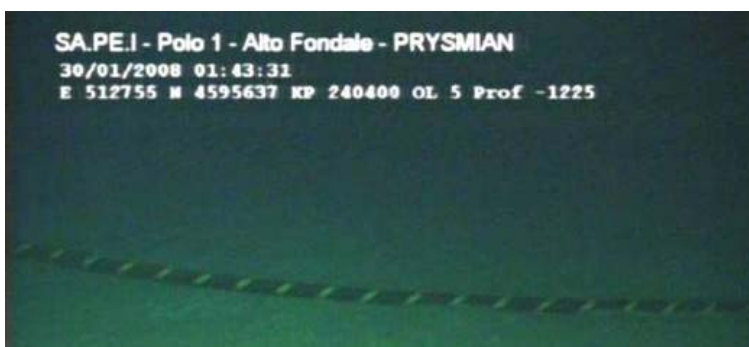
What's next? What will be needed?

SUBMARINE CABLES FOR DEEP WATER APPLICATIONS

EXPLOITING NEW POSSIBLE CONNECTIONS TO LINK
REMOTE POWER GENERATION TO HIGHLY URBANISED
COMSUPTION CENTERS



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Aluminium conductor
Semiconducting paper tapes

Insulation of paper tapes impregnated
with viscous compound

Semiconducting paper tapes

Lead alloy sheath

Polyethylene jacket

Metallic tape reinforcement

Syntetic tape or yarn bedding

Double layer of steel armour (flat wires)

Polypropylene yarn serving

Weight = 37 kg/m

Diameter = 120 mm

LONG LENGTHS FOR LAND CABLES

MINIMISING JOINTING ACTIVITIES AND INCREASING
ABILITY TO TIMELY BUILT RELIABLE HIGH POWER
TRANSMISSION LINES



CABLES SUITABLE FOR AC AND DC OPERATION

POSSIBILITY TO “UPGRADE”
AC SYSTEMS TO DC

EXISTING DESIGN WITH PAPER
FLUID FILLED INSULATION
(Spain – Morocco)



NEED FOR:

- CURRENT AND FUTURE OPERATING PARAMETERS DEFINED IN ADVANCE
- QUALIFICATION/TESTING PROTOCOL SUITABLE FOR BOTH TECHNOLOGIES

NEW DESIGN TO SATISFY NEW NEEDS

NEW DESIGNS...

NEW MATERIALS...

NEW PERFORMANCE LIMITS...

...NEW IDEAS

WHICH DRIVERS?

NETWORK RELIABILITY

ENVIRONMENTAL ASPECTS

COST EFFICIENCY

HVDC INTERCONNECTIONS

“Deeper, Longer and with Higher Power Rating”

HIGHER POWER RATING IN HVDC LINKS WILL, IN MOST OF THE CASES, OPTIMIZE THE LIFETIME RETURN OF INVESTMENT

THE INDUSTRY IS READY TO INSTALL CABLES AT 2000M WATER DEPTH

‘DEEPER, LONGER AND WITH HIGHER POWER RATING’ MEAN MORE COMPLEXITY IN PROJECT PLANNING AND IMPLEMENTATION