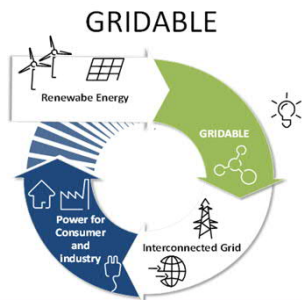


GRIDABLE

PLASTIC NANOCOMPOSITE INSULATION MATERIAL ENABLING RELIABLE INTEGRATION OF RENEWABLES AND DC STORAGE TECHNOLOGIES IN THE AC ENERGY GRID



GRIDABLE target is to connect renewable energy sources to the energy grid in a more efficient way through innovative PP nanocomposites

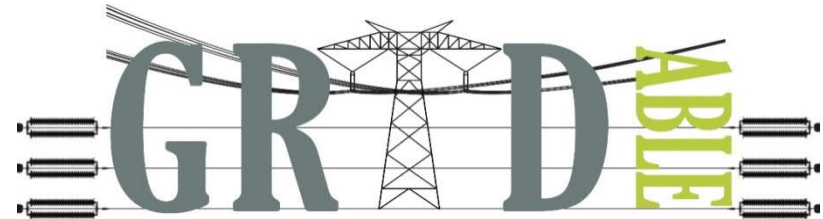
“Industrial scale manufacturing of biaxially-oriented capacitor film made of nanocompound polypropylene”

14th June 2021

Vladimír Monček - Terichem Tervakoski a.s.

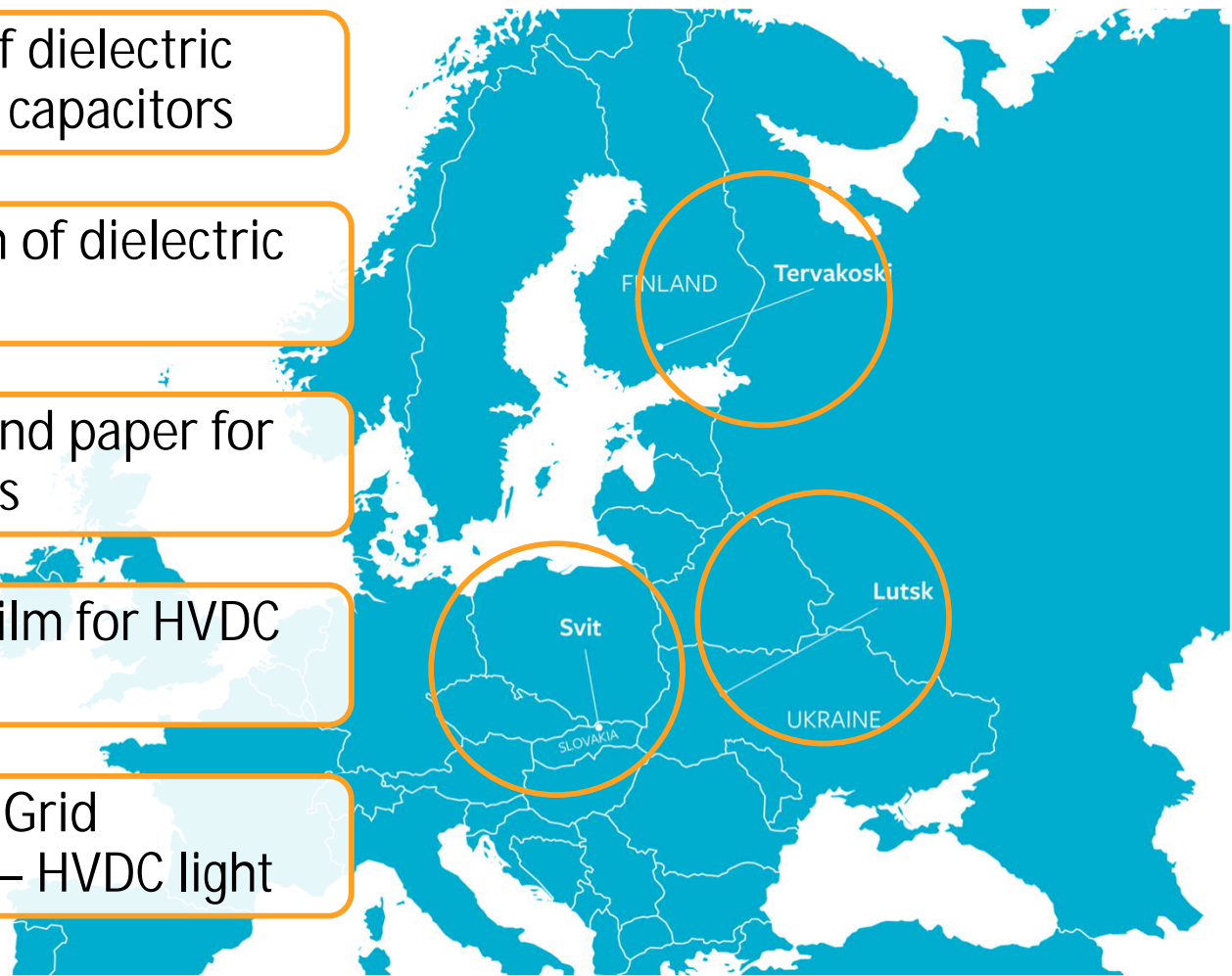


EC GRANT AGREEMENT NUMBER 720858



Terichem Tervakoski a.s. is **Tervakoski film**

- 1921 • Production of dielectric paper for HV capacitors
- 1955 • Metallisation of dielectric materials
- 1972 • BOPP films and paper for HV capacitors
- 1986 • BOPP hazy film for HVDC capacitors
- 2010 • Era of Smart Grid applications – HVDC light



THE GROUP WITH GLOBAL ROLE



HVDC applications - decades of experience

- HVDC/HVAC power transmission systems
- Wind power plants - generation and conversion
- Solar power plants - conversion
- Protection and filtering

ITAIPU DAM BRASIL
HVDC Classic



THREE GORGES CHINA
HVDC Classic



OFFSHORE WIND FARMS
HVDC Light & Classic



Our role in GRIDABLE project

- Processing of Gridable nanocomposite materials into BOPP capacitor base films
- Converting of the films by vacuum metallizers to specific designs
- Linking the “ industrial ” supply chain from compounding to capacitor endurance



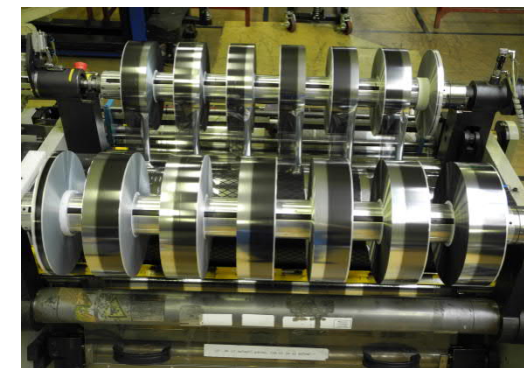
PROCESSING OF GRIDABLE NANOCOMPOSITE MATERIALS INTO BOPP CAPACITOR BASE FILMS

- The first industrial scale manufacturing
- State-of-the-Art BOPP capacitor base film line
- Gridable material route :
Nanocompound Master-batch diluted with virgin
PP polymer in defined ratio – precise dosing system
- 3 generations of film prototypes made



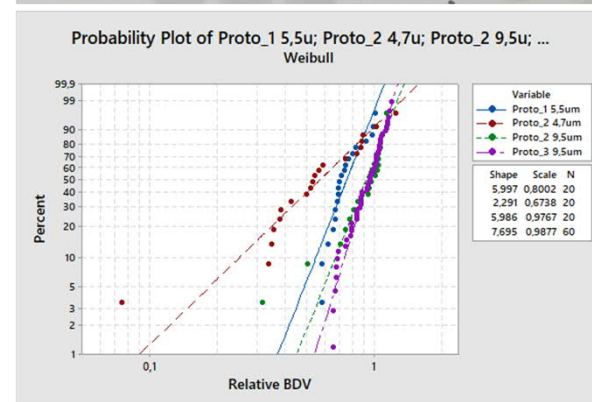
CONVERTING OF THE FILMS BY VACUUM METALLIZERS TO A SPECIFIC DESIGN

- The first industrial scale metallizing of nanocompound film
- State-of-the-Art vacuum metallizers
- Specific designs of metallized film defined by Gridable partner



QUALIFICATION OF THE FILMS BY ROUTINE AND LABORATORY TESTS

- Routine testing methods and criteria as used for commercial products
- Authentic testing - Endurance laboratory tests performed to support further steps of other partners



MAIN ACHIEVEMENTS

Industrial BOPP capacitor film manufacturing route successfully adapted to handle nanocomposite material

- Film manufacturing process successful with routine commercial quality requirements
- Metallization of nano composite capacitor film successfully manufactured on industrial devices
- Unique project consortium between scientific and industrial partners



Thanks to EU's Horizon 2020 research and innovation programme who's financing made
this project possible

