

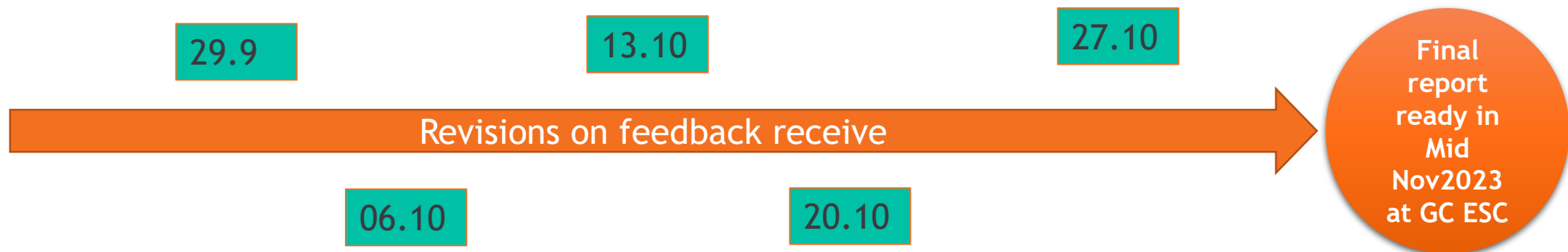
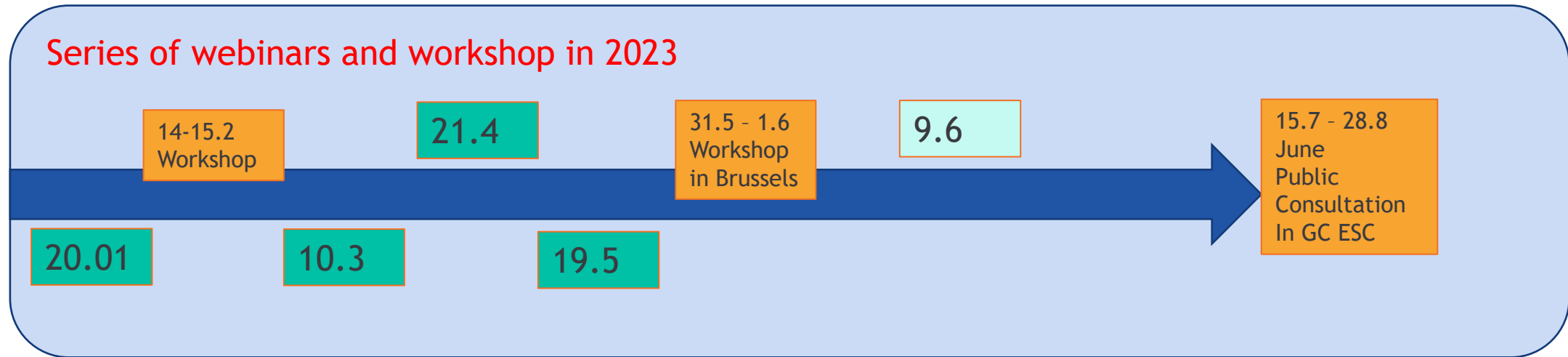
# EG CROS Status

28 September 2023



Dr. Mario Ndreko (TenneT TSO, Germany)

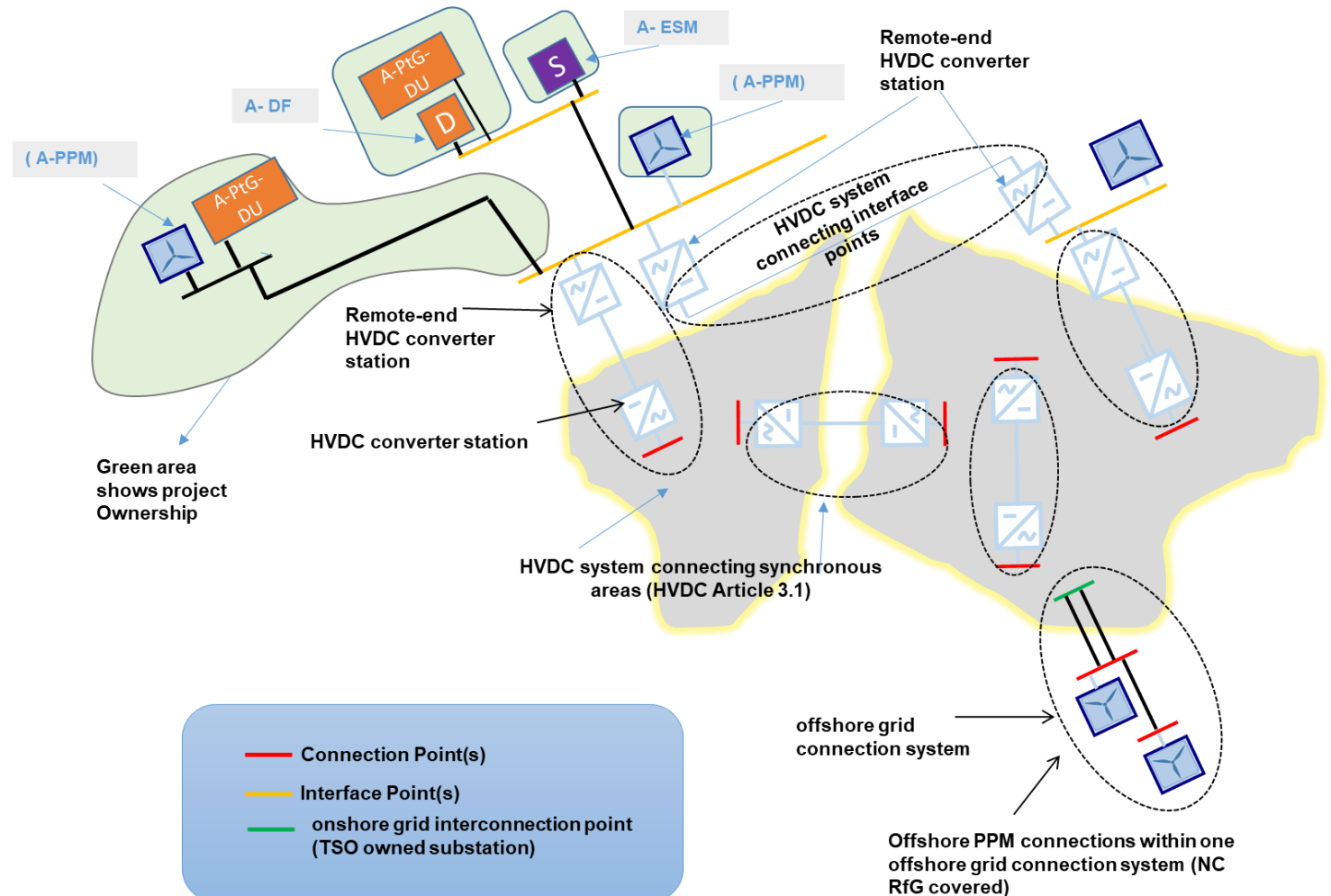
# Timeline of the EG CROS Phase II



# Amendment of NC HVDC: Expert Group on Connection Requirements for Offshore system (EG CROS)

Phase II report: Proposes NC HVDC amendment proposals

- Grid forming technical requirements for HVDC systems and DC connected PPMs;
- Requirements for DC connected PtG;
- New requirements for parallel offshore HVDC systems;
- RoCoF requirements;



# Amendment of NC HVDC

## Expert Group on Connection Requirements for Offshore system (EG CROS)

### Phase II: NC HVDC Amendment Proposals

Amendment 1: Article 3 (scope of NC HVDC)

Amendment 2: Article 4 (Application to existing HVDC systems)

**Amendment 3: Article 12 (RoCoF withstand capability)**

**Amendment 4: Article 14 (Grid forming capability)**

Amendment 5: Article 16 (Frequency control)

Amendment 6: Article 19 (short circuit contribution during faults)

Amendment 7: Article 35 (Priority ranking of protection and control)

Amendment 8: Article 36 (Changes to protection and control schemes and settings)

Amendment 9: Title III (increase of scope)

Amendment 10: Article 38 (scope)

Amendment 11: Article 39 (Frequency stability requirements)

Amendment 12: Article 40 (Reactive power and voltage requirements)

Amendment 13: FRT Capability of power to gas demand units

Amendment 14: Article 41 (Control requirements)

Amendment 15: Article 42 (Network characteristics)

Amendment 16: Article 43 (Protection requirements)

Amendment 17: Article 44 (power quality)

Amendment 18: Article 45 (General system management requirements)

**Amendment 19: NEW Article X (Grid forming capability)**

Amendment 20: Article 37 (black start)

Amendment 21: Article 44 (power quality)

Amendment 22: Article 47 (Frequency stability requirements for remote-end HVDC)

Amendment 23: Article 48 (voltage ranges, remote end HVDC station)

# Thank you very much for your attention

Our values define who we are, what we stand for and how we behave.  
We all play a part in bringing them to life.



## EXCELLENCE

We deliver to the highest standards.  
We provide an environment in which people can develop to their full potential.



## TRUST

We trust each other, we are transparent and we empower people.  
We respect diversity.



## INTEGRITY

We act in the interest of  
ENTSO-E



## TEAM

We care about people. We work transversal and we support each other.  
We celebrate success.



## FUTURE THINKING

We are a learning organisation.  
We explore new paths and solutions.

**We are ENTSO-E**