

A detailed map of Europe and its surrounding regions, including parts of North Africa, the Middle East, and the Arctic. The map is overlaid with a dense network of red and orange lines representing high-voltage power transmission lines. The lines are most concentrated in Western and Central Europe, with significant connections across the Mediterranean and into the Balkans. Major bodies of water like the North Sea, Baltic Sea, and Black Sea are labeled. Country names such as Norway, Sweden, Finland, Estonia, Latvia, Lithuania, Russia, Belarus, Poland, Czech Republic, Slovakia, Austria, Hungary, Romania, Bulgaria, Turkey, and Greece are visible. A legend in the top left corner provides technical details about the map's scale and line types.

Prospects for Ukraine and Moldova Synchronisation

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**21st Athens Forum:
Energy Community
Electricity Forum**

Athens, 1 June 2016

1

Experience gained with Turkey

2

Synchronous interconnection
Ukraine Moldova

1

Experience gained with Turkey

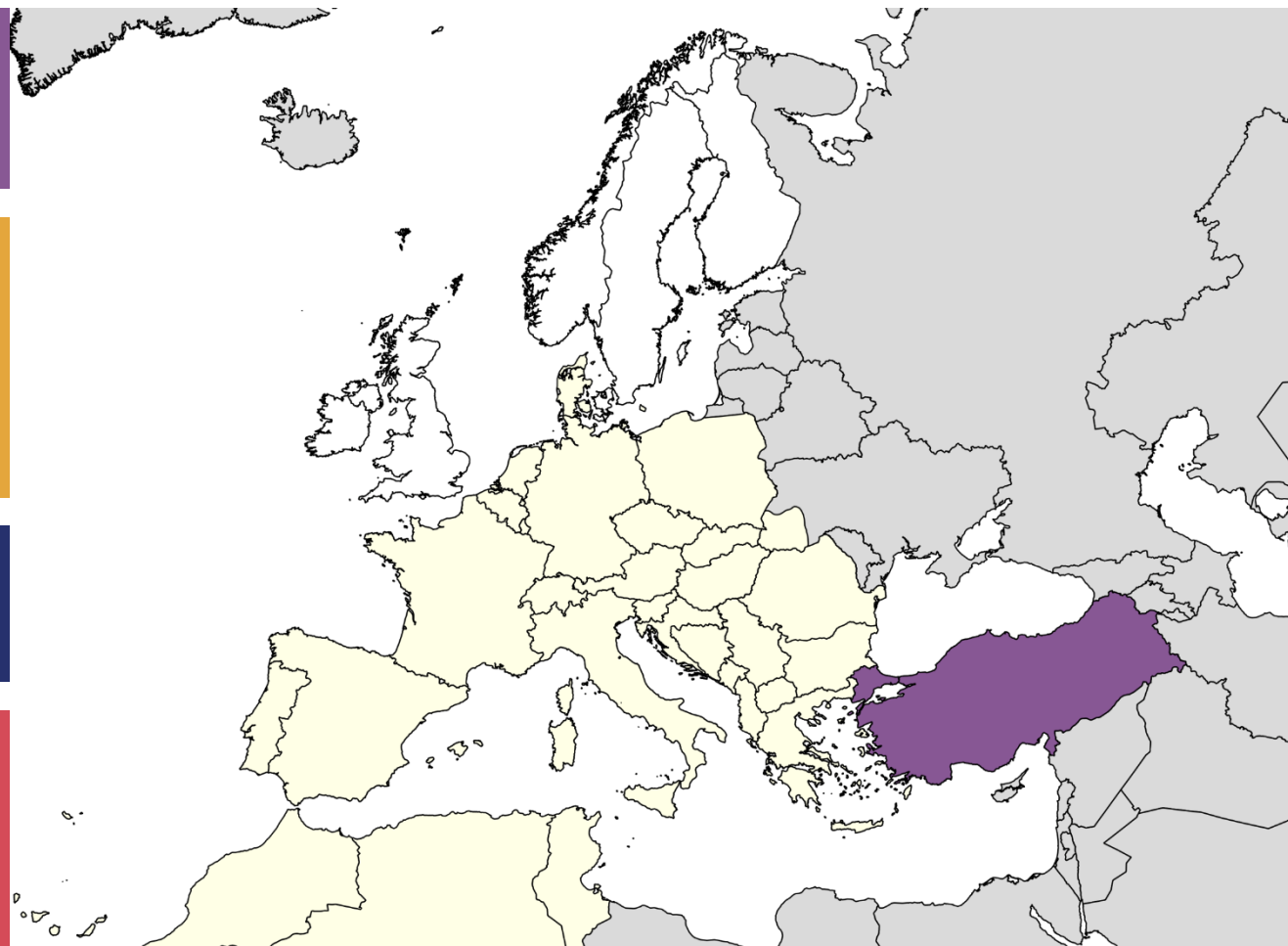
Experiences with other countries: Turkey

Long process from the application in 2000 till signing the LTA in 2015.

Very high investments in the Turkish transmission grid to reach compliance – due also to the size of the system. Local voltage problems were encountered too.

Excellent skills and high motivation of the Turkish colleagues.

Weak interconnection (only three 380 kV lines). Therefore, it was necessary to implement a special protection scheme.



2

Synchronous interconnection Ukraine Moldova

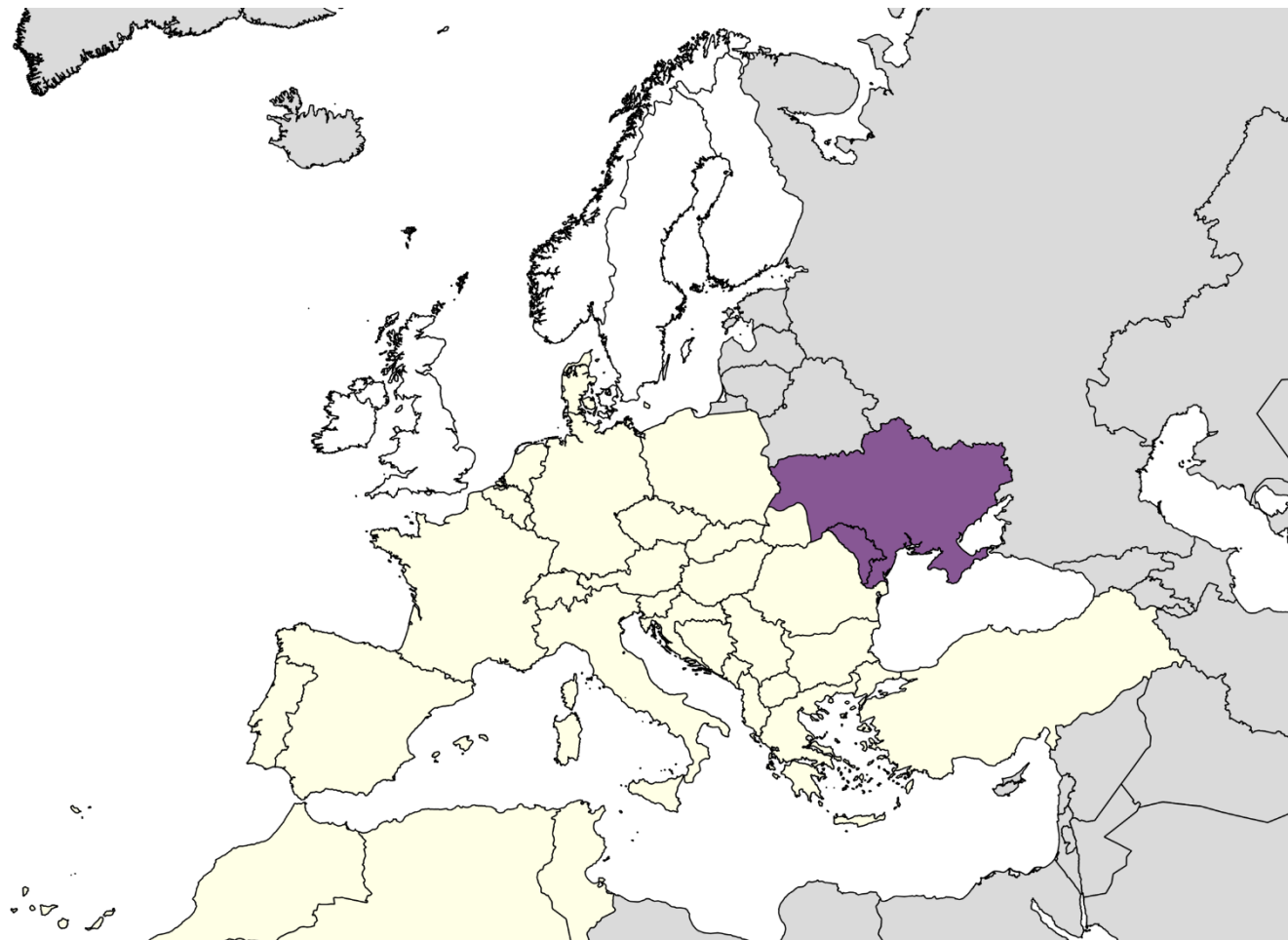
Synchronous interconnection of Ukraine/Moldova

Feasibility study finished in the beginning of 2016

Q1/2016: UA/MD asked to re-start the synchronous interconnection process initiated in 2006

System extension of type B

10/02/2016: Regional Group CE positively assessed the feasibility, but asked for additional studies and to investigate the option of AC/DC hybrid interconnection – a road map with a catalogue of measures to be set up



Next steps /1/

Ahead of the trial synchronous operation with the synchronous area Continental Europe, Ukrenergo and Modelectrica to:

- perform all additional studies; and
- fulfil all technical requirements specified in the Catalogue of Measures (CoM) of the future Connection Agreement. National legislations might require change e.g. to allow procurement of reserves.

CoM will also require to comply with the rules and principles of the operational network codes and guidelines (e.g.: SO GL) which will be in force at the time of the synchronisation.



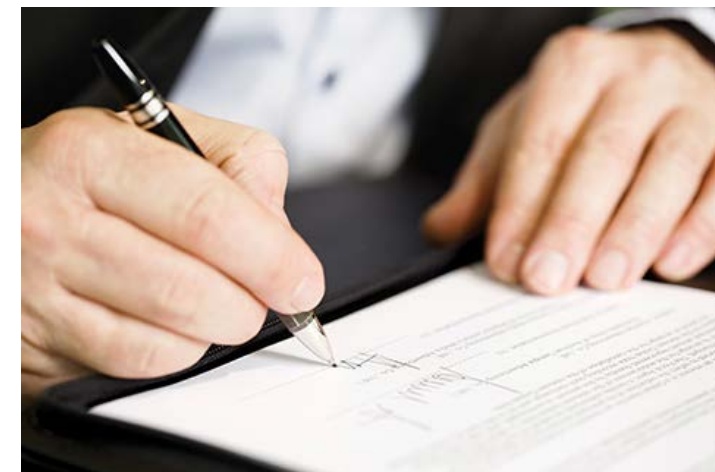
Next steps /2/

If the trial synchronous operation is successful, **Ukrenergo and Modelectrica to sign a Long Term Agreement (LTA) with ENTSO-E.**

LTA to ensure that TSOs maintain their compliance with the operational rules of the synchronous area (i.e. Operation Handbook) and with the rules and principles of the operational network codes and guidelines (e.g.: SO GL).

NB: Operation Handbook to be updated in light of the SO GL when entering into force.

Upon the signature of the LTA, the synchronous operation is permanent.



Thank you for your attention



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Criteria for ENTSO-E observer membership



BACK-UP SLIDES

Criteria for ENTSO-E observer membership /1/

Ukrenergo needs to fulfil the following criteria

ENTSO-E Articles of Association (Article 10):

- The candidate is a legal person constituted under the laws of its country of origin
- The candidate is designated as a transmission system operator in accordance with the laws of its country of origin
- The candidate demonstrates that it is unbundled from all activities related to generation or supply of electricity under Article 9 of the Directive 2009/72/EC or similar provisions in the laws of its country of origin



Criteria for ENTSO-E observer membership /2/

- The candidate is located in a country with a physical link relevant for the IEM in terms of market conditions and/or in terms of the physical reality of its transmission interconnections; and
- The candidate has entered into an Observer Membership agreement



UkrenergO: timeline for reaching the observer members status

Past steps

- Letter UkrenergO to ENTSO-E in 2015 to apply for “membership” of ENTSO-E
- Decision of ENTSO-E Board early 2016 to initiate the steps needed to assess the application of UkrenergO for the status of Observer Member
- March 2016: UkrenergO submitted the first part of the application documents

Future steps

- ENTSO-E Board decision on whether to recommend to the ENTSO-E Assembly to grant UkrenergO with the status of Observer Member
- ENTSO-E Assembly decision whether to grant UkrenergO with the status of Observer Member
- Signing the Observer Membership Agreement

Objective to finalise the process in 2016