



union for the co-ordination of transmission of electricity

UPS/IPS request for interconnection The UCTE work schedule

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Content

▶ **•Present status of UCTE**

▶ **•Request of UPS/IPS**

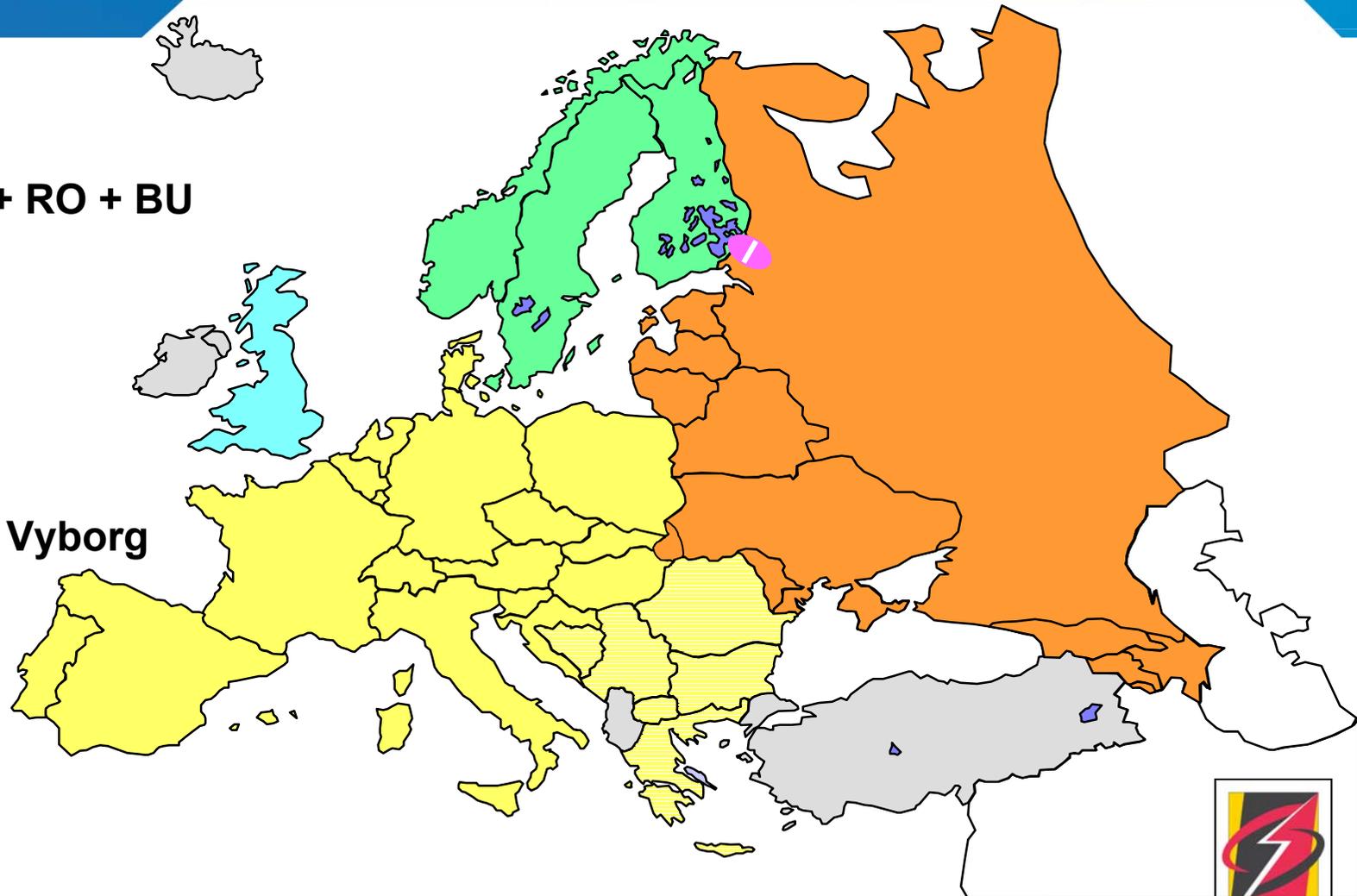
▶ **•Questions to look at**

▶ **•UCTE's way to handle the request**

▶ **•Summary**

Present status of UCTE

- UCTE Zone 1
- UCTE Zone 2 + RO + BU
- Nordel
- IPS/UPS+
- England
- Back-to-Back Vyborg



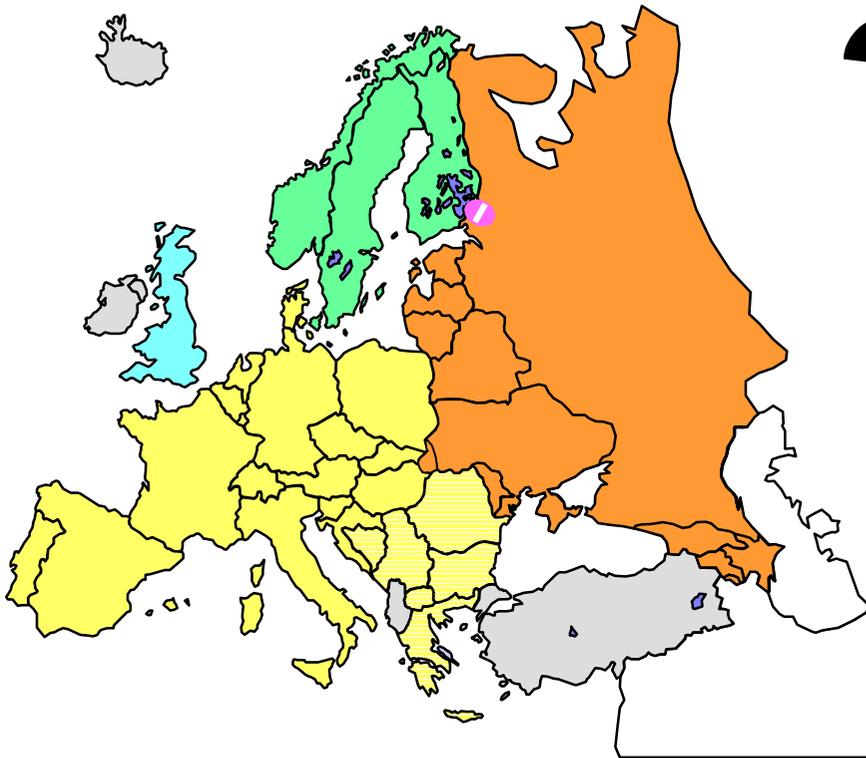
Request of UPS/IPS

UCTE

synchronously interconnected with

IPS/UPS+
synchronously
interconnected
countries:

**Baltic countries, Belarus,
Ukraine, Moldova, Russia,
Georgia, Azerbaijan,
Armenia, Iran, Kazakhstan,
Turkmenistan, Uzbekistan,
Kyrgyz, Tajikistan, Mongolia**



Questions to look at (1)

- **Load/frequency control (different technical standards)**
- **N-1 reliability criterion**
- **Impact on existing bottlenecks both within national networks of UCTE members and on international tie lines in the UCTE synchronous area**
- **No experience available for synchronising such large electrical blocks.**

Questions to look at (2)

- **Need to increase the reliability margin on critical interconnections within the UCTE area**
- **Impact on control reserve margins**
- **Stability aspects**
- **Cost share for studies**
- **Cost share for technical consequences (e.g. necessary technical adaptation)**

UCTE's way to handle the request (1)

Resolution (April 02):

- UCTE confirms its willingness to constructively address this UPS/IPS request.
- Well-functioning markets may spread either over fully synchronous or cover different synchronous areas
⇒ assessment of both technical options for interconnection (AC and DC)
- However, a short-term synchronisation is not deemed feasible

UCTE's way to handle the request (2)

Investigation schedule (Sept 02):

- **Step 1:** **Pre-feasibility Study**
- **Step 2:** **Assembly's decision** (May 03) whether a Feasibility Study is engaged
- **If green light from Step 2:**
Step 3: **Feasibility Study**

UCTE's way to handle the request (3)

Step 1: UCTE Pre-feasibility Study

In charge: UCTE Sub Group "East of CENTREL".

Main objective: to study via a stationary load flow analysis how the horizontal network of UCTE can cope with long distance transits in both ways as well as a certain amount of stability checks.

Basis: the UCTE Network topology as assumed by the end of 2003 (including Romania, Bulgaria, Burschtyn Island as well as the reconnected UCTE second synchronous zone).

Results: expected by the end of 2002



UCTE's way to handle the request (4)

Step 2 Decision by the UCTE Assembly on 8 May 2003

Taking into account

- the results of the Pre-feasibility Study and
- all aspects brought in by the TSO stakeholders, market participants, affected authorities and other concerned parties

The UCTE Assembly decides about the launch of a Feasibility Study.

UCTE's way to handle the request (5)

Step 3 Feasibility Study

Objective: deeper dynamic stability analysis; definition of the technical conditions set as prerequisites by the various stakeholders in order to secure security, reliability and quality of supply. **Clear perspectives** on the financial and time framework for the solution envisaged.

In charge: to be carried out in co-operation between the experts of UCTE and UPS/IPS.

Time horizon: about two years.

Summary

• **Technical feasibility** - without decrease of quality and reliability level! - is **prerequisite for interconnection**
⇒ to be approved by UCTE.

• In case of green light fulfilment of **political requirements** (environmental standards, cost based pricing, reciprocity) and **commitment of market participants** (bearing of cost consequences) is necessary.