

OME Annual Conference

ROUND TABLE 1: REGIONAL AND SUB-REGIONAL ELECTRICITY SYSTEMS, A CROSS-CUTTING ANALYSIS

Introductory remarks

Affecting the Mediterranean region as a whole

Europe (since 2008)

- load demand stagnation due to the economic crisis
- huge increase in RES production

Non EU countries

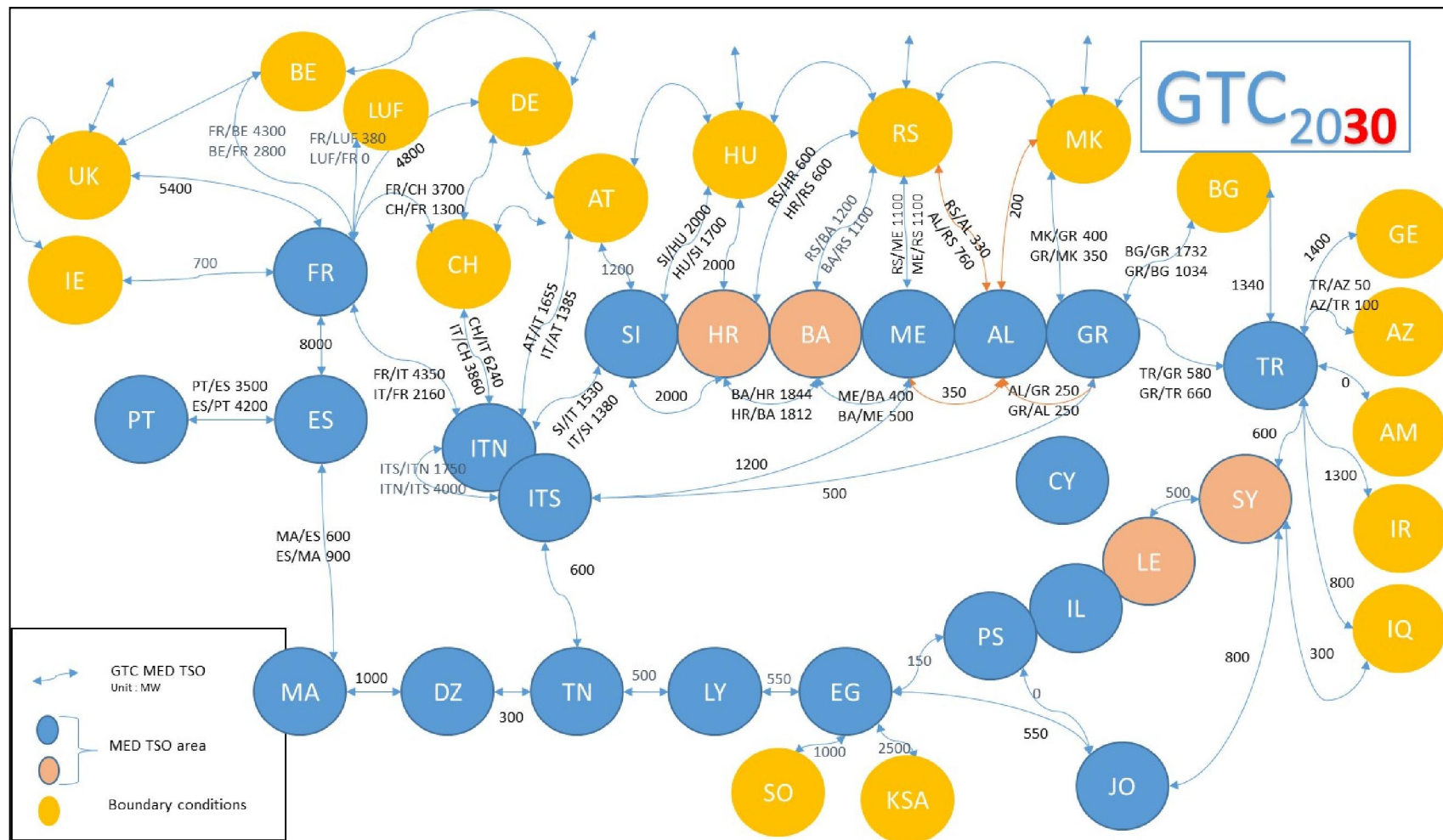
- average load demand increase of about 5% /yr
- limited financial capabilities for new (RES) generation because of market fragmentation



1. The “***Desertec vision***” demonstrated to be **non realistic and has been abandoned**
2. Benefits of new infrastructures fully exploited only in a multi-lateral dimension, as prevailing flows (N-> S vs S-> N) may vary from project to project in the next 15 years

- Current status: from mutual help to economic trade-off
- Existing interconnections:
 - ✓ Spain-Morocco and Turkey – Bulgaria – Greece (commercial)
 - ✓ Morocco-Algeria, Algeria-Tunisia (commercial and security issues)
 - ✓ Libya – Tunisia (substantially open for stability constraints)
 - ✓ Egypt – Libya (partial supply of the Libyan network)
 - ✓ Egypt – Jordan (commercial exchanges)
 - ✓ Turkey – Syria (open due to the war in the region)
- Forecasted demand increase (2013 to 2040) (*):
 - ✓ 546 TWh to ca. 1,600 TWh (non EU countries)
 - ✓ 1,347 TWh to ca. 2,000 TWh (EU countries)

(*) Med-TSO sources



(*) based on the already planned investments in the Region – source Med-TSO

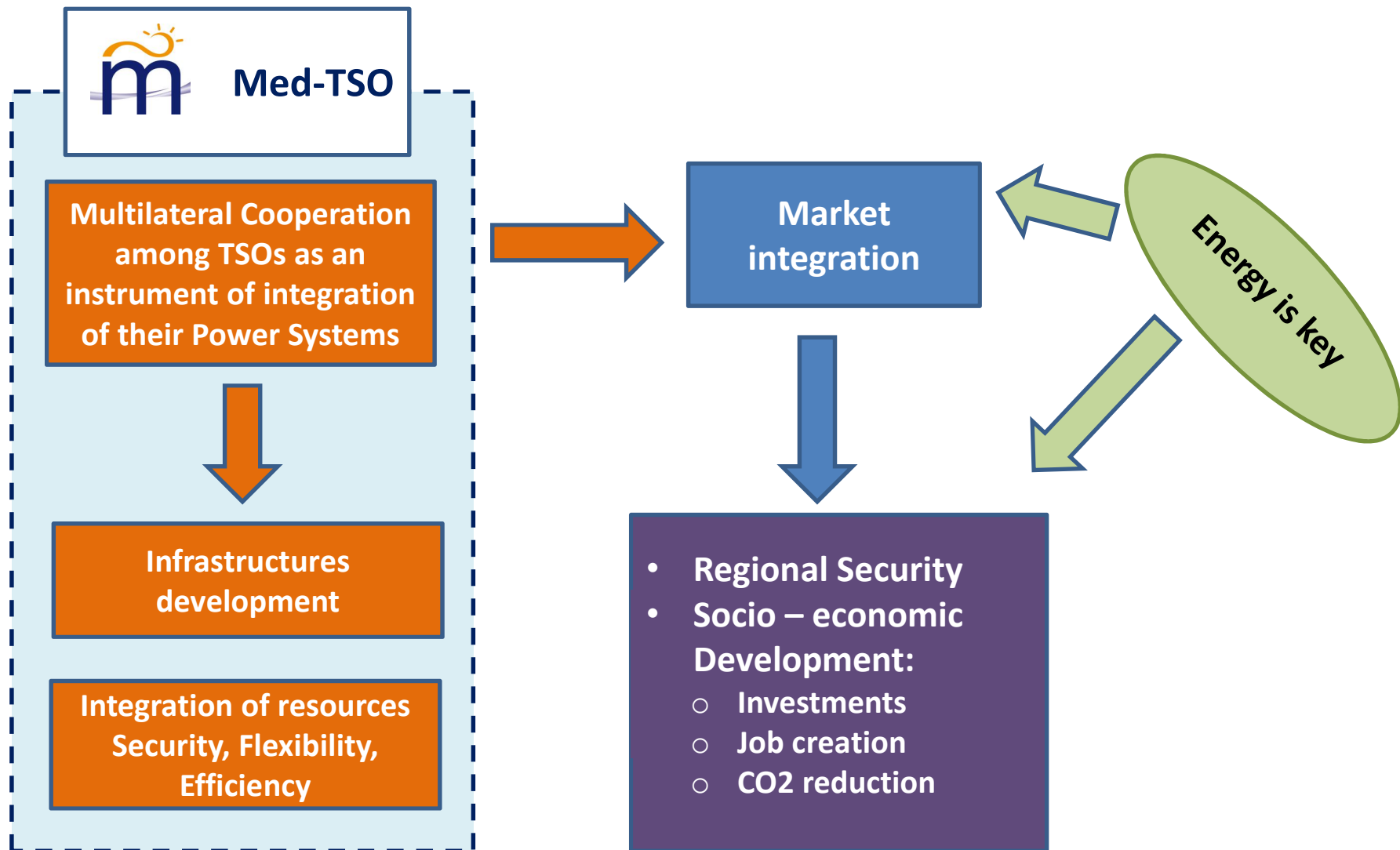
- **Peak-Demand increase** of about **90 GW** (Eastern and Western Mediterranean Countries)
- About **150 GW (15% RES)** of new **generation capacity** (planned investment of **220-250 Billion EUR**)
- A very consistent set of relevant grid infrastructure to be realized:
 - ✓ About 33,000 km of new HV transmission lines (for total investments of about 20 Billions EUR)



Increasing exchanges need more technical coordination (for grid development, network operation and information sharing)

(*) Med-TSO, Master Plan of the Mediterranean Interconnections (2013 – 2022), under revision

- **Mediterranean power systems not homogeneous:**
 - wide variety of market development initiatives
 - diversified natural resources
 - different energy systems and load profiles offering opportunities of cross-border complementarities (both demand and supply)
- There is not a “one-size-fits-all” approach: it is necessary to support the convergence of national interests through different sub-regional projects that can serve as pilots
- If one interconnection project succeeds, because a regulatory system for such projects was set up, then the attractiveness of the whole region for investments is likely to increase



Albania - OST

Algeria – SONEGAZ, GRTE, OS

Cyprus – Cyprus TSO

Egypt - EETC

France - RTE

Greece - ADMIE

Israel - IEC

Italy - Terna

Jordan – NEPCO

Libya – GECOL

Morocco - ONEE

Montenegro - CGES

Palestine - PETL

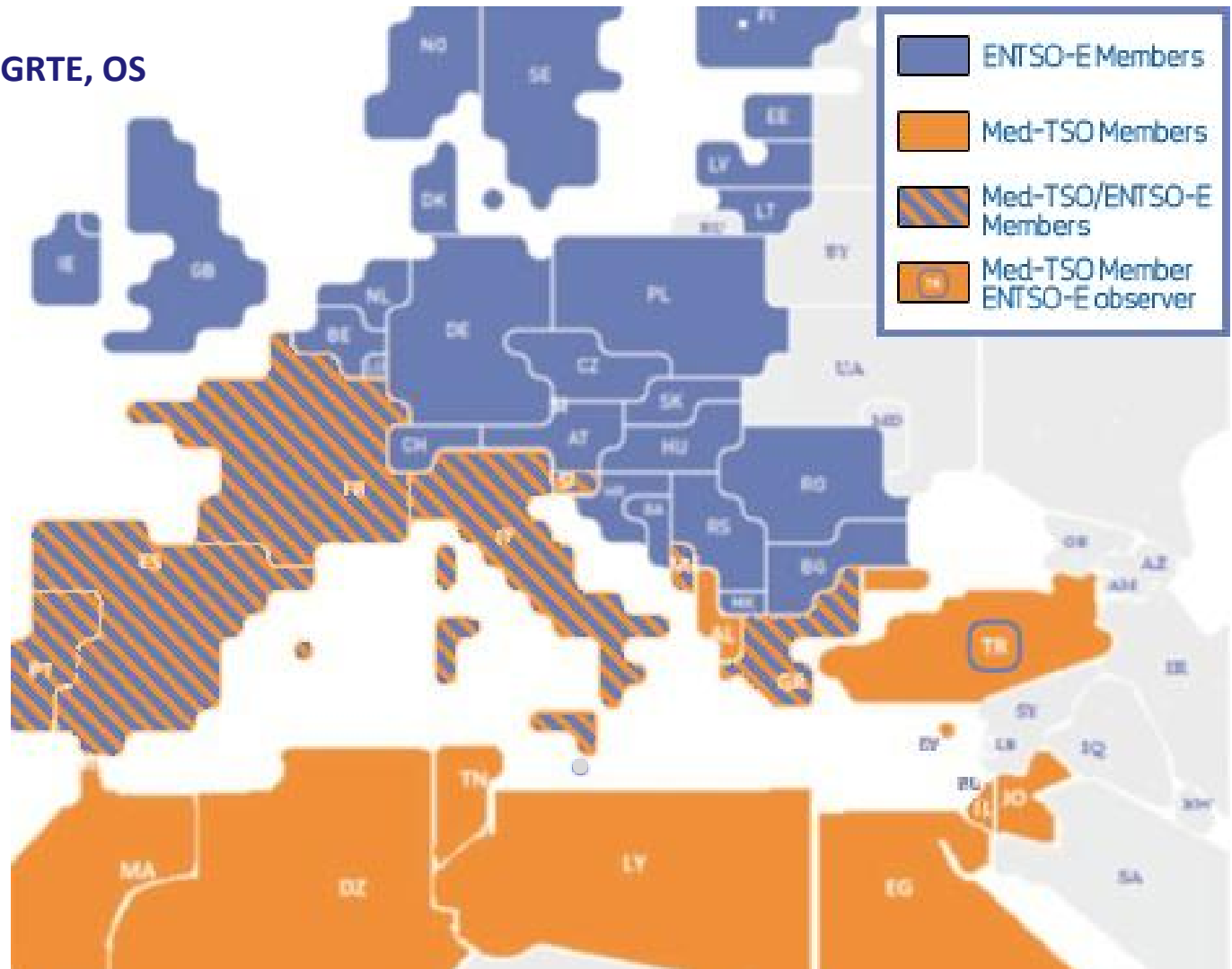
Portugal - REN

Spain - REE

Slovenia - ELES

Tunisia - STEG

Turkey - TEIAS



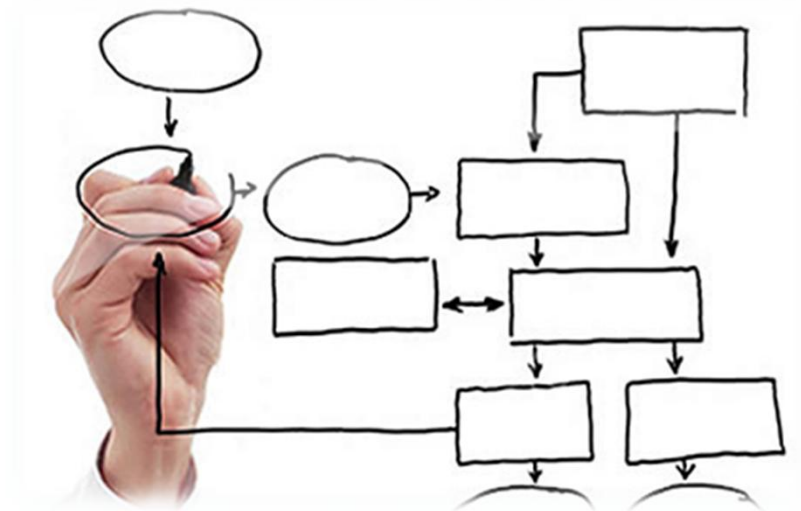
- **20** members from **18** Mediterranean countries
- **8.5 million** km² ca covered
- About **500 million** of consumers served
- Around **400,000 km** of transmission lines operated
- Almost **544,000 MW** of installed capacity to dispatch
- More than **1,600 TWh** of total electricity consumption

- **First Master Plan of the Mediterranean Electricity Interconnections** (Jan-Jul 2013)
under the project “Paving the Way for the Mediterranean Solar Plan” launched by the EC
- **Mediterranean Project** (underway, 02.2015 – 01.2018)
supported by the EC DG NEAR



The Project moves through the following activity lines:

- **Rules** - common set of basic rules;
- **Infrastructure** - guidelines for Network Planning and implementing a Euro-Mediterranean Electricity Reference Grid;
- **International Electricity Exchanges** - development of a Mediterranean Electricity System;
- **Knowledge Sharing** - establishing a forum among the relevant professionals working
- **Med-TSO Database** - creation of a Mediterranean database



- UfM REM platform: catalyst of the political consensus to make the process faster, but this is not a “one-way” path!

Objectives for 2030

- **Regional coordination** and cooperation is **intensified**
- **Common principles** for market integration are defined and **pilot projects** are set up to test implementing them

- **Energy is key** for the Mediterranean Region
- Transmission: long-term, high capital-intensive investments → **multilateral cooperation** is crucial for capturing all the regional benefits also in terms of RES integration, operation and innovation (storage)
- **Gradual approach** for sharing rules, methodologies and scenarios → Mediterranean Project is a good example of cooperation
- No one-size-fits-all solutions: **sub-regional approach**
- Non market-only-driven investments: **need of appropriate CBA and CBCA**
- **Technical barriers**: the role of Med-TSO
- **Political / Institutional barriers**: UfM platforms vs Med-TSO /MEDREG cooperation
- **Financial issues**: realization of first projects as a flying wheel for future investments



Thank you for your attention



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