



Study Committee C1

System Development and Economics

Cross Border Electricity Trade: A Step Towards the Development of Clean Energy Trade for Iran

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Presentation Flow

- Cross Border Electricity Trade and Iran Strategic Position
- Regional Electricity Markets - How They Formed
- A General Overview of the Regional Electricity Markets Around Iran
- Iran Potential In Electricity Trade Market Development and Participation
- The Concept of the Electric Energy Hub and its Realization for Iran
- Operational and Executive Suggestions
- Summary and Conclusion

Cross Border Electricity Trade and Iran Strategic Position

- Since decades ago, electricity as a strategic commodity has played a special role in foreign interactions.
- As a result, the regional electricity market as a local area for this business is being developed and also rapidly developing.
- Iran is a country that has, in many respects, relative advantages and strong backing for entry into this market or even the creation of a market with its own focus and role.

Cross Border Electricity Trade and Iran Strategic Position

- Resilience Economy is one of the main upstream document for the large-scale planning and policy making in various fields in Iran, including energy.
- Section 13 of the general policies of the resilience economy addresses the issue of counteracting the vulnerability of oil and gas export earnings. One of the effective measures in this regard is the export of electricity. (or in general form, electricity exchange)
- Therefore, one of the main themes of the resilience economy, which was entrusted to the Ministry of Energy, is the development of electricity exports (or exchange).

Cross Border Electricity Trade and Iran Strategic Position

The advantages of exporting electricity are categorized as follows:

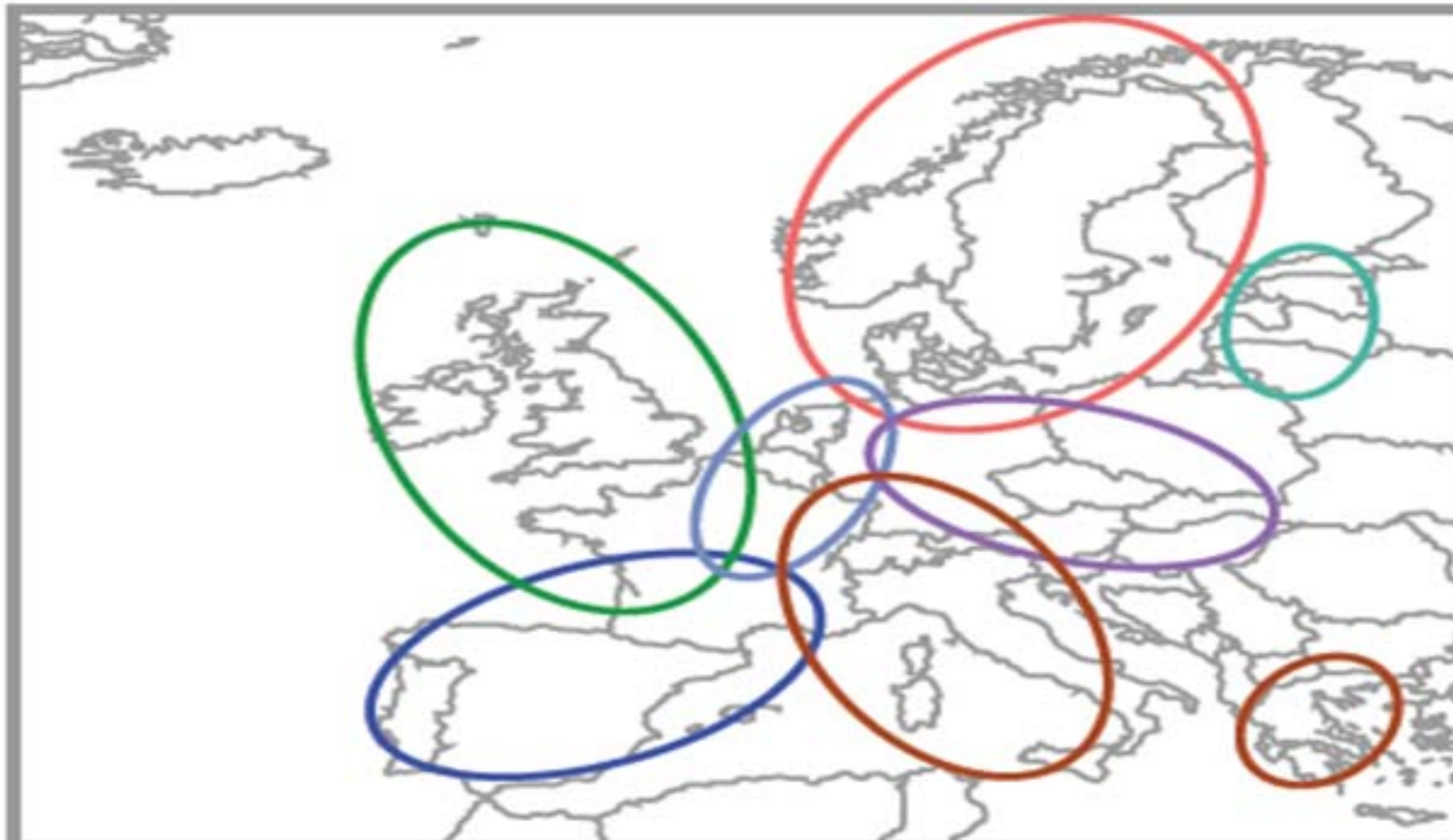
- A) diversification into the export basket of energy (in addition to oil and gas)
- B) Development of communications with neighboring countries
- C) Strengthen the position of Iran as the **region's energy hub**
- D) A stable source of income, even in sanctions

A General Overview of Electricity Markets Around the World



Examples of the Formation of Regional Electricity Markets

- A - The continent of Europe

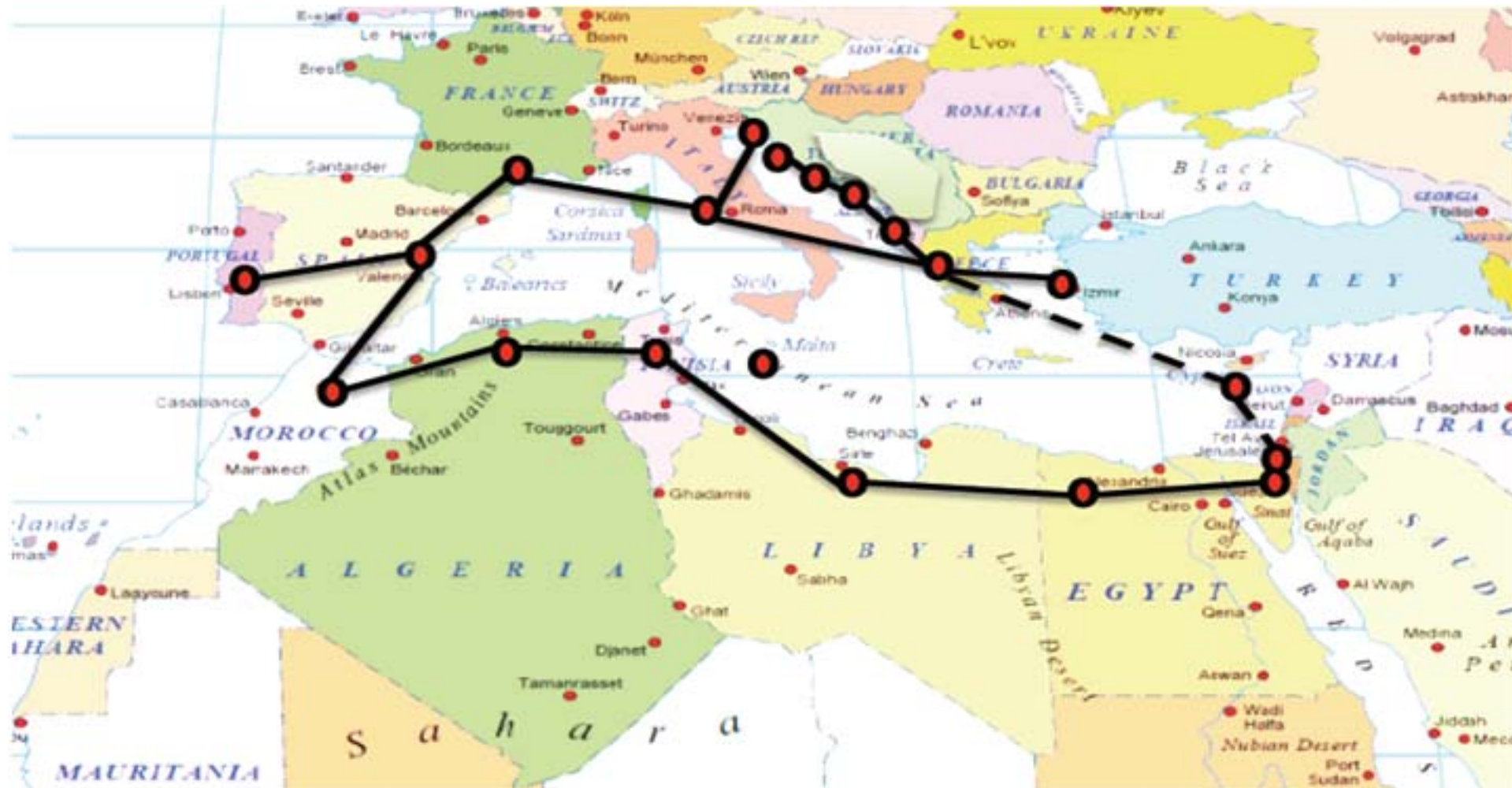


Region	Lead regulator
Central-West	Belgium
Northern	Denmark
UK and Ireland	Great Britain
Central-South	Italy
South-West	Spain
Central-East	Austria
Baltic	Latvia

■ Central West	■ Northern
■ UK & Ireland	■ South West
■ Central South	■ Central East
■ Baltic	

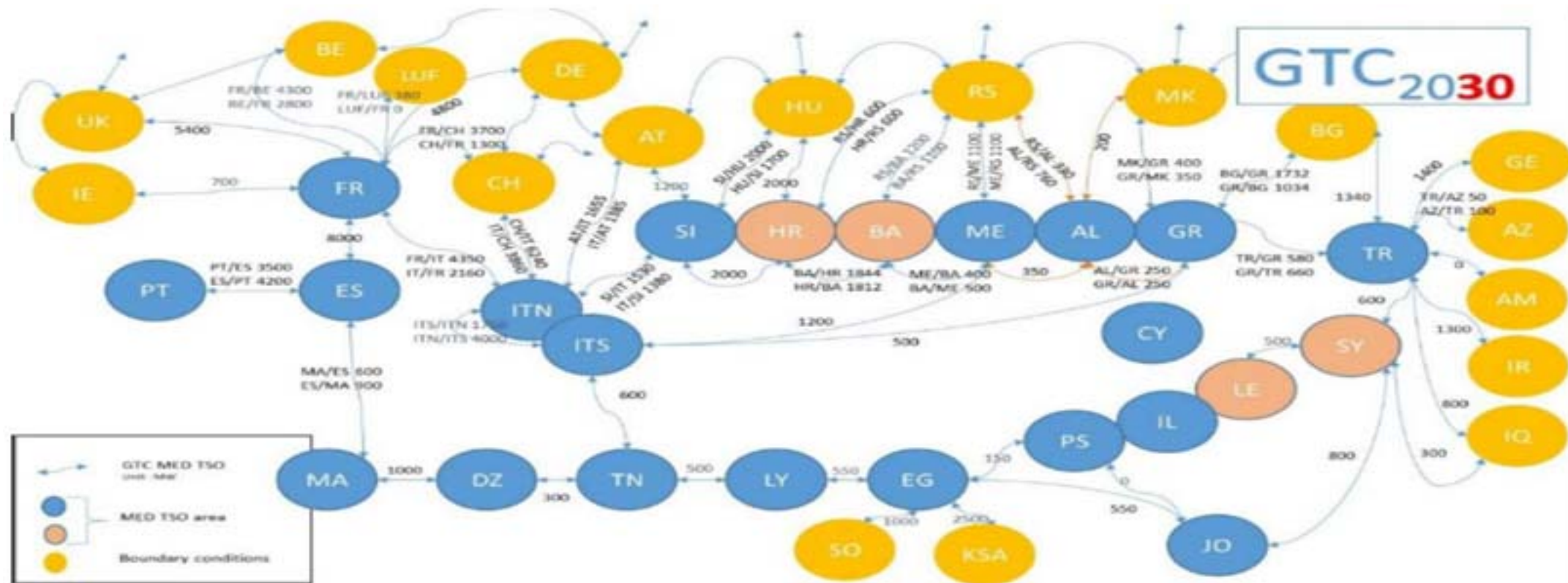
Examples of the Formation of Regional Electricity Markets

- B - 1 - Mediterranean Sea Basin



Examples of the Formation of Regional Electricity Markets

- B - 2 - Mediterranean Sea - planning by 2030



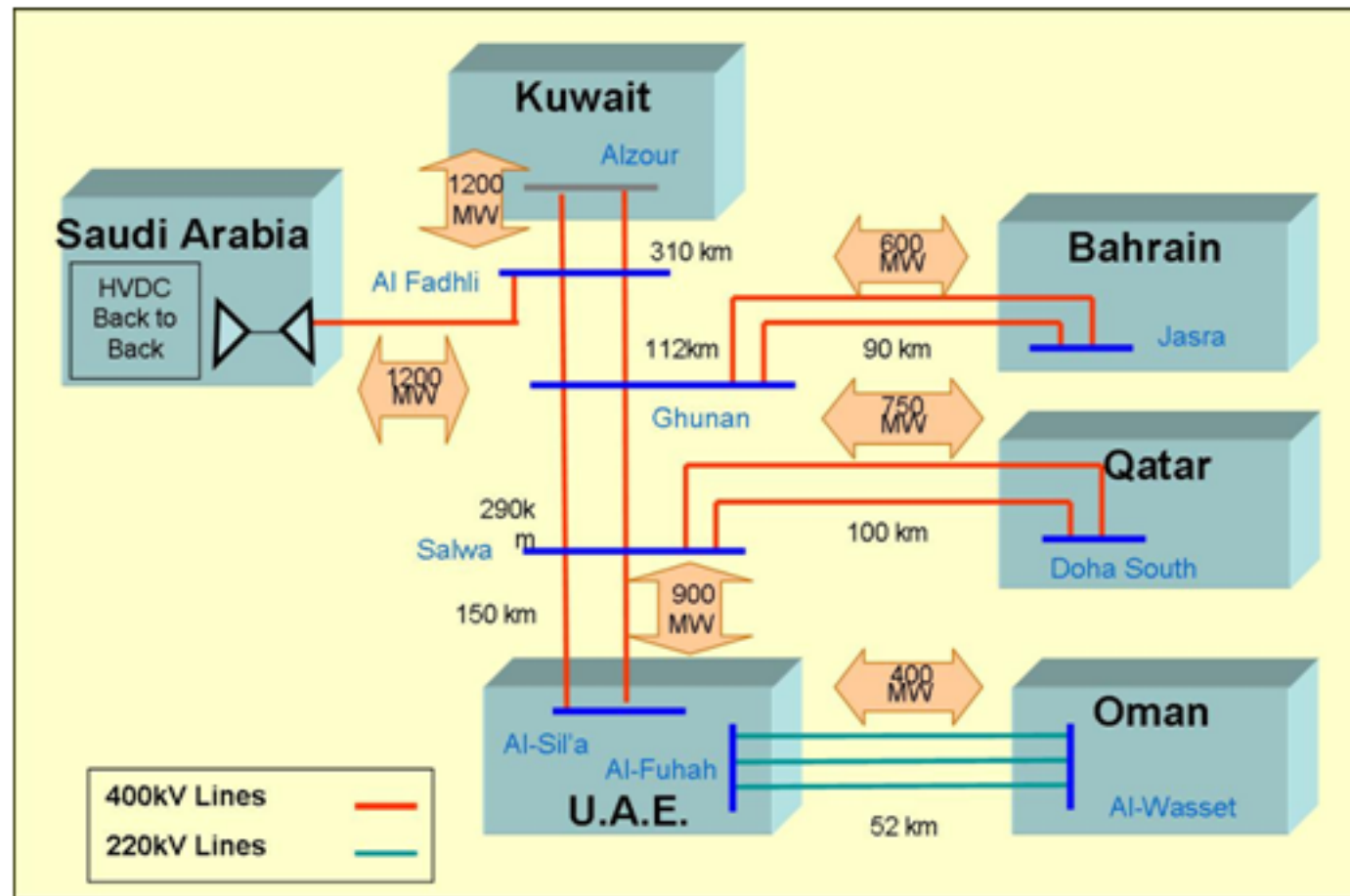
Examples of the Formation of Regional Electricity Markets

- C - Southeast Asia (ASEAN)



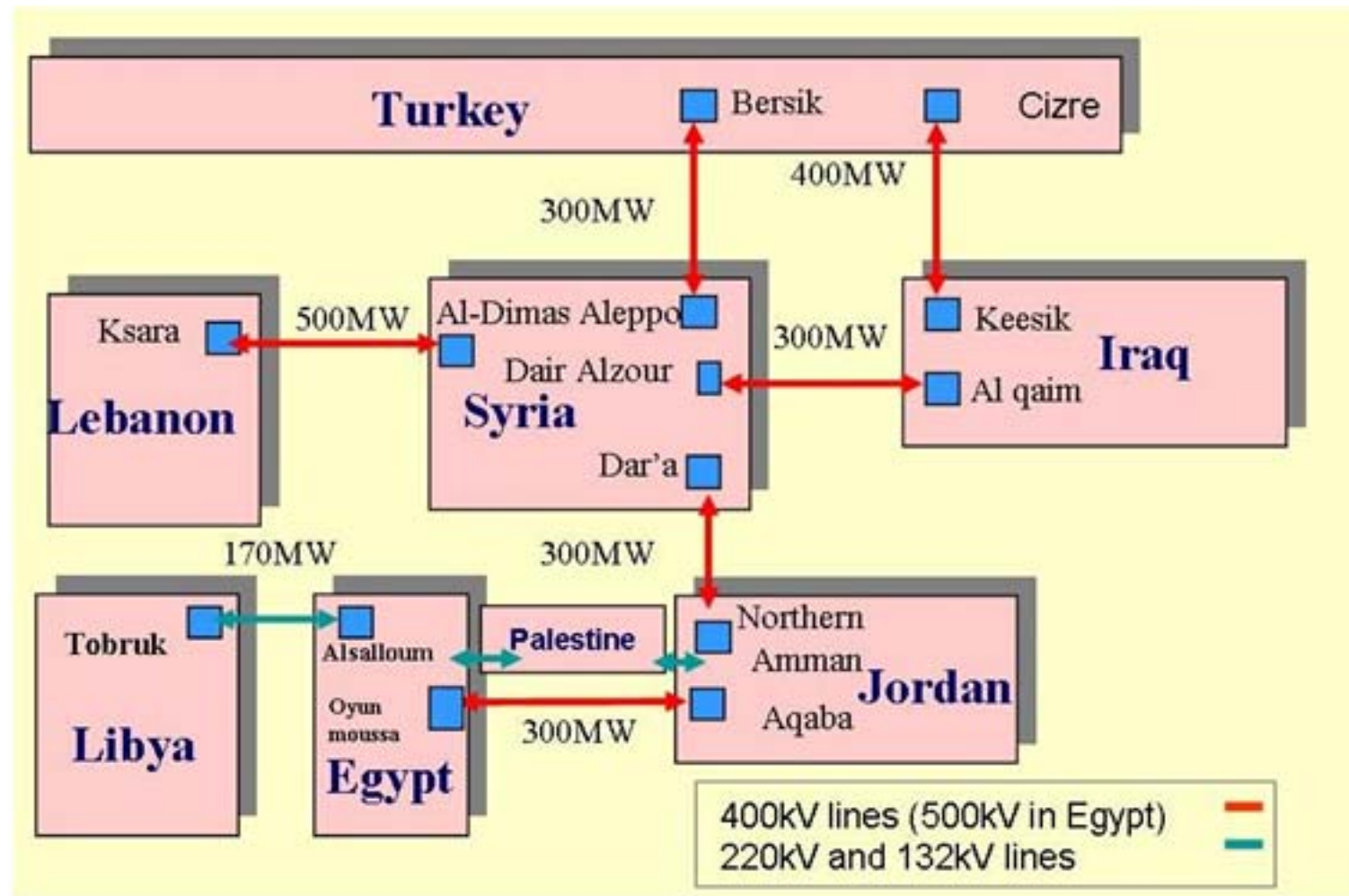
Regional Electricity Markets Around Iran

- A) Arab union(GCC)



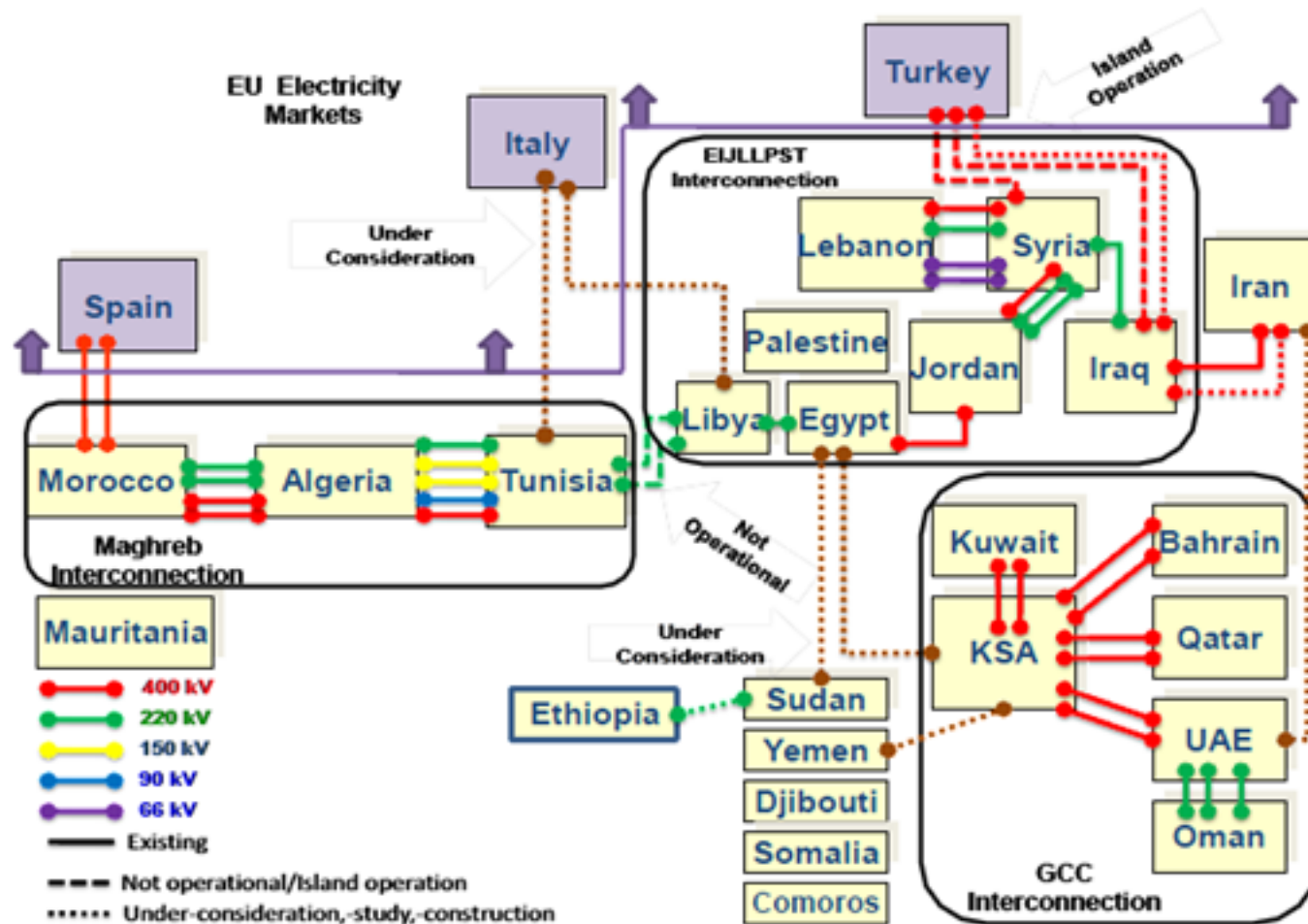
Regional Electricity Markets Around Iran

- B) EIJLLPST Market



Regional Electricity Markets Around Iran

- C - Planning the connection of the three markets GCC, EIJLLPST and Maghreb



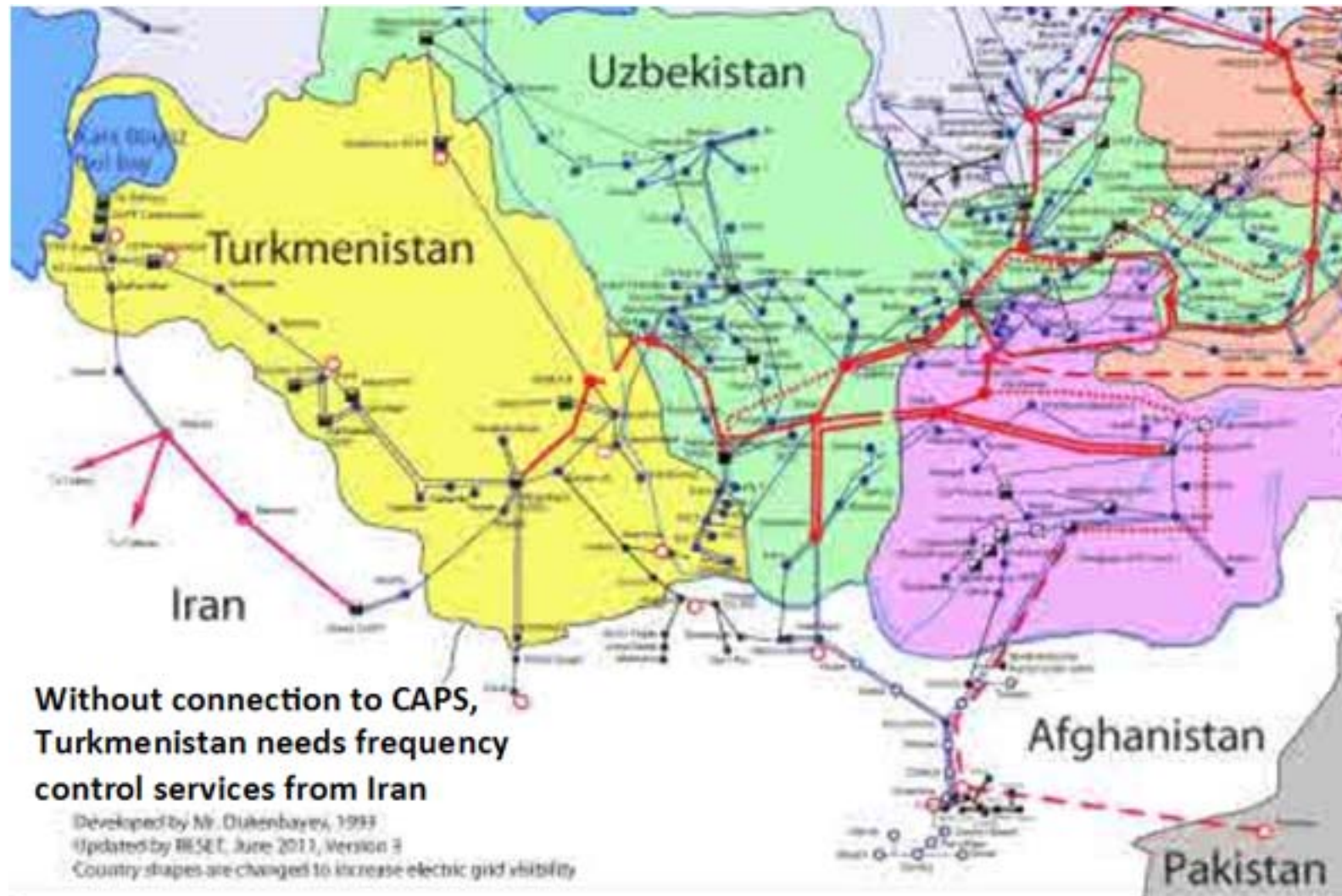
Regional Electricity Markets Around Iran

- Central Asia



Regional Electricity Markets Around Iran

- Central Asia



Regional Electricity Markets Around Iran

- E) Southern Caucasus



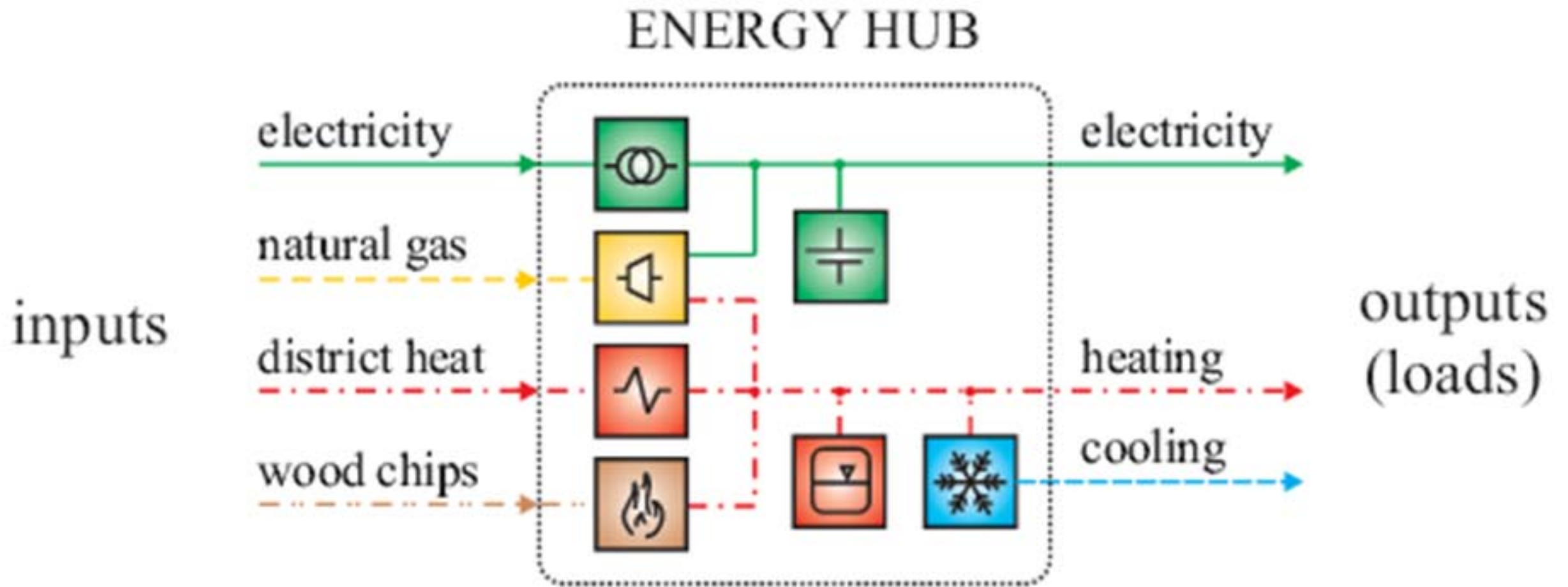
Advantages of Creating Regional Market and Electricity Trade

- 1- Reducing the cost of electricity due to cheap resources accessible by countries and competitive prices.
- 2. Transitional surplus production of some countries to other countries with a shortage of production in order to create common interests for both sides
- 3. Increase reliability of interconnected power system and the use of reserve capacities of networks by market participants.
- 4. Electric energy exchange due to the horizontal difference and consequently the difference in consumption peak and the need for less investment.

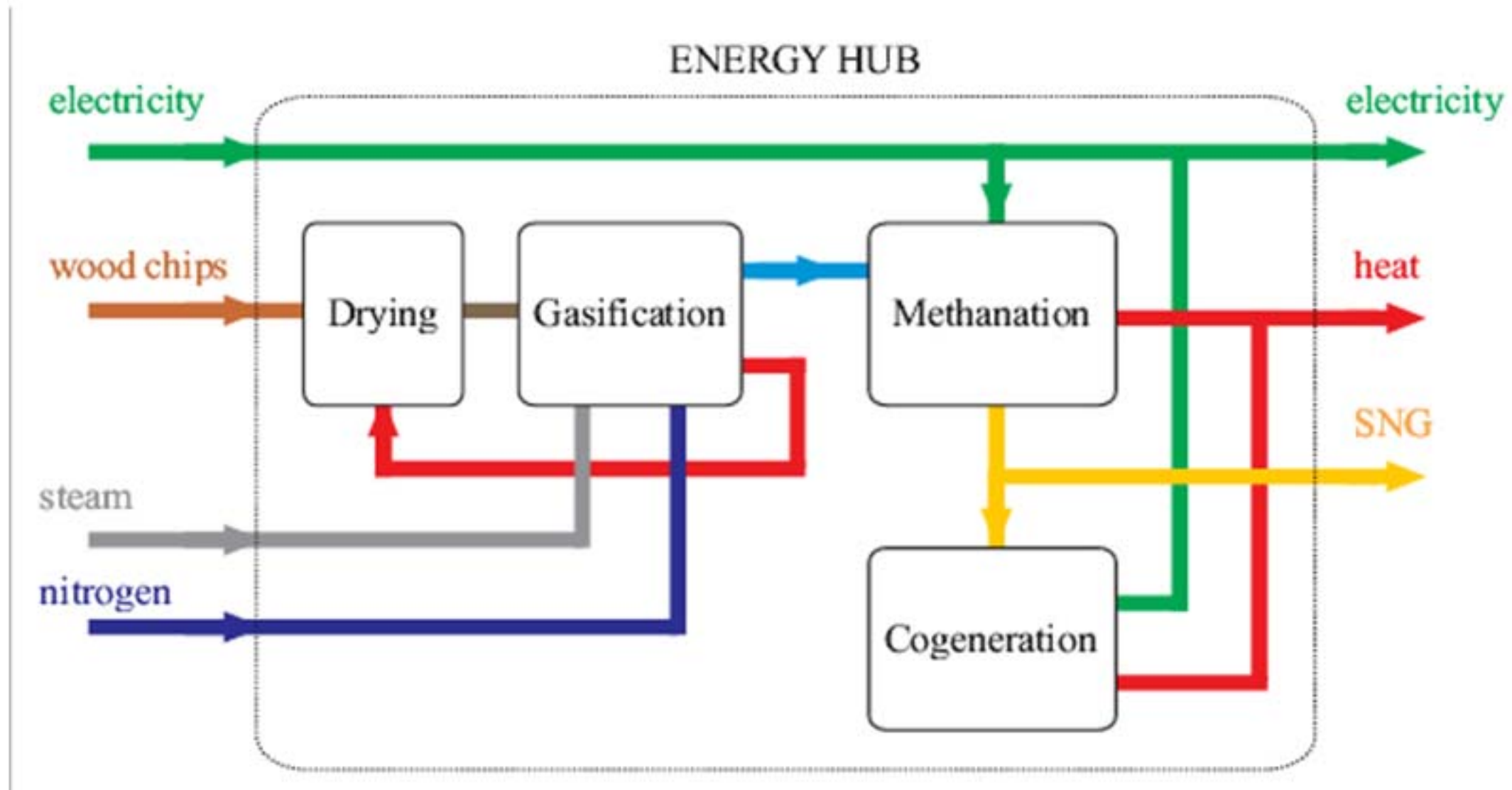
Iran's Comparative Advantages for Electricity Trade

1. Iran's strong potential in hydrocarbon reserves as well as renewable and consequently strong sources of power generation
2. The expansion of the country and the existence of a reliable infrastructure for communicating with neighboring countries and regions
3. Comparative advantage of electricity exchange in both the seasonal and daily time intervals due to the extent of both latitude and longitude
4. History and experience of relatively long exchange of electricity with neighboring countries and overcoming its technical and executive challenges.

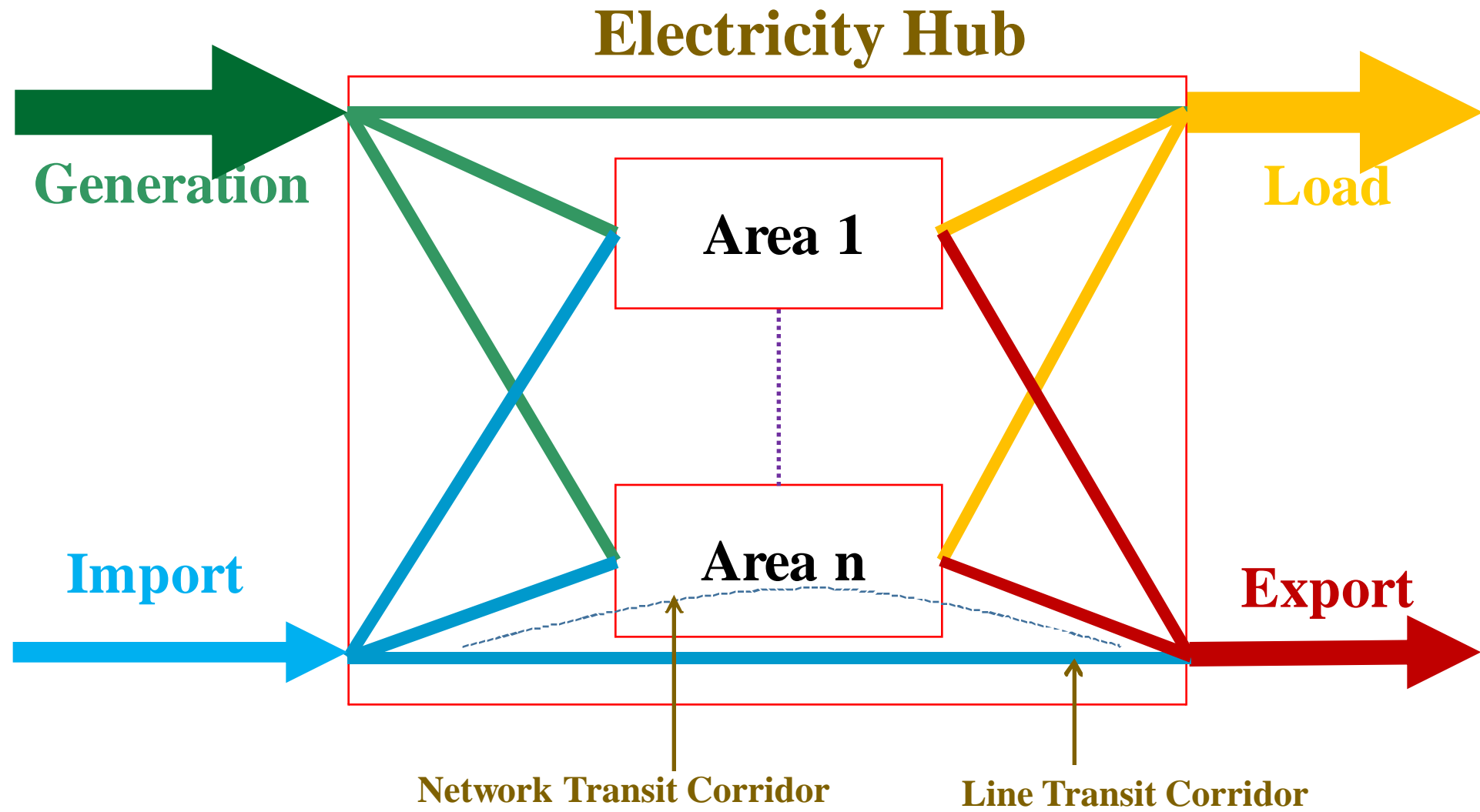
The Concept of Energy Hub (1)



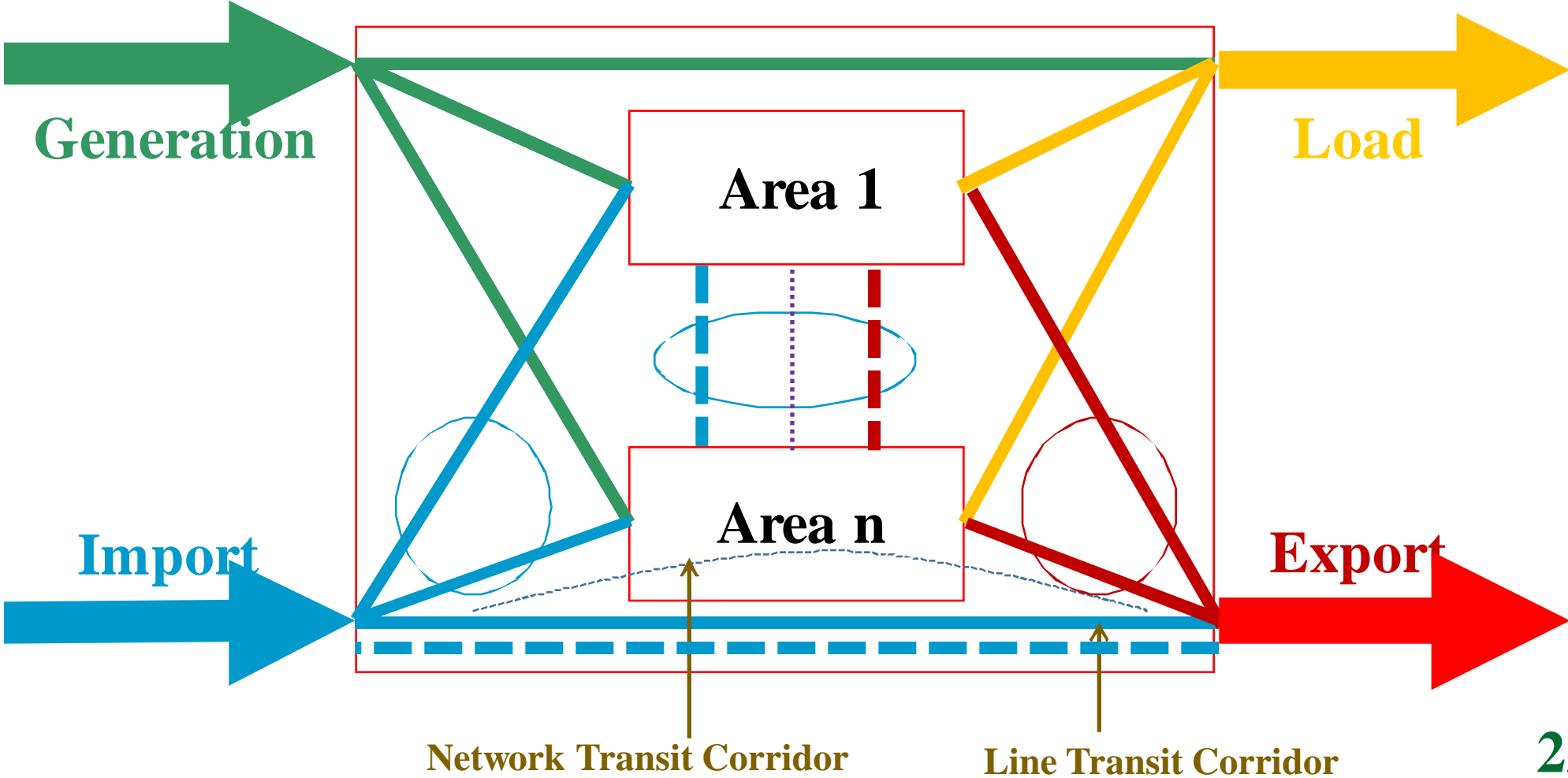
The Concept of Energy Hub(2)



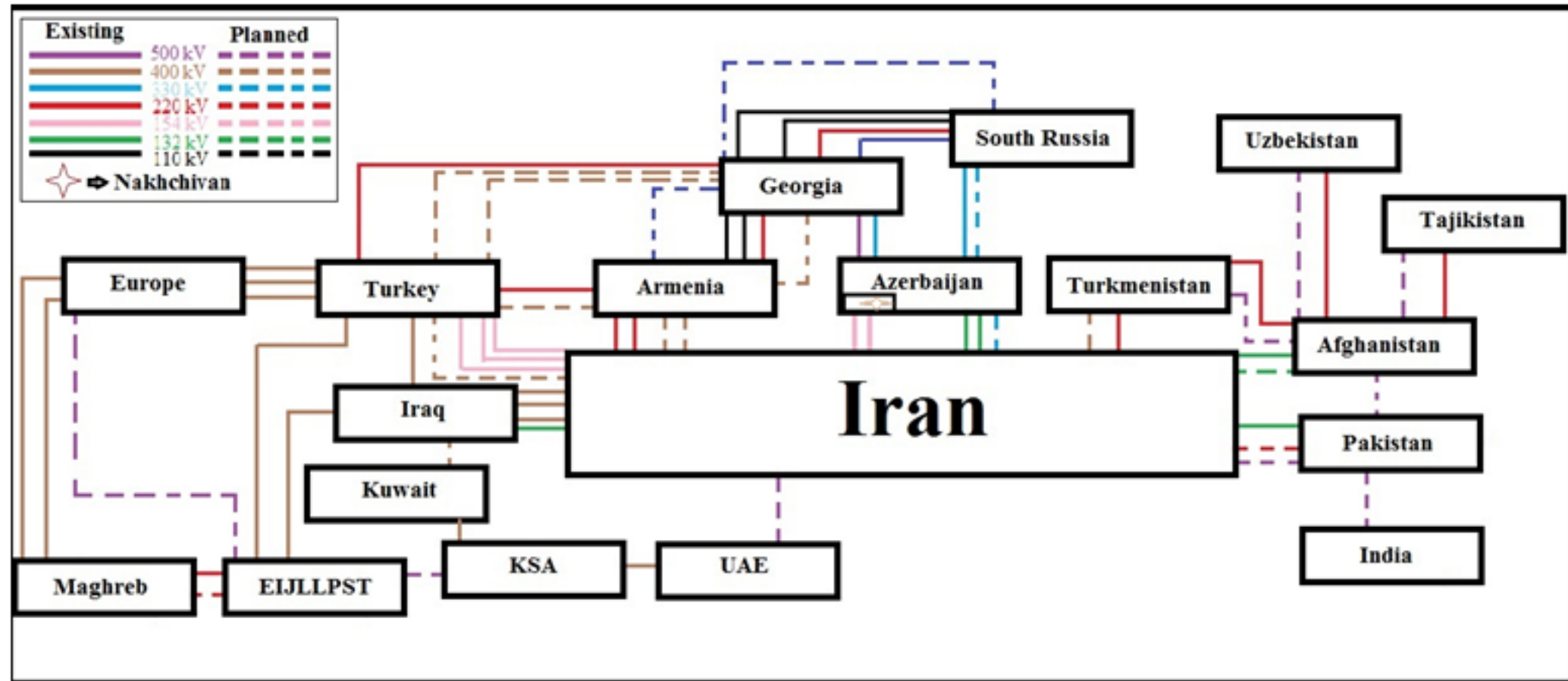
The Concept of Electricity Hub for Iran



Increased Share of Imports and Exports (Energy Transit)



The General Overview of Iran In the Regional Markets Around

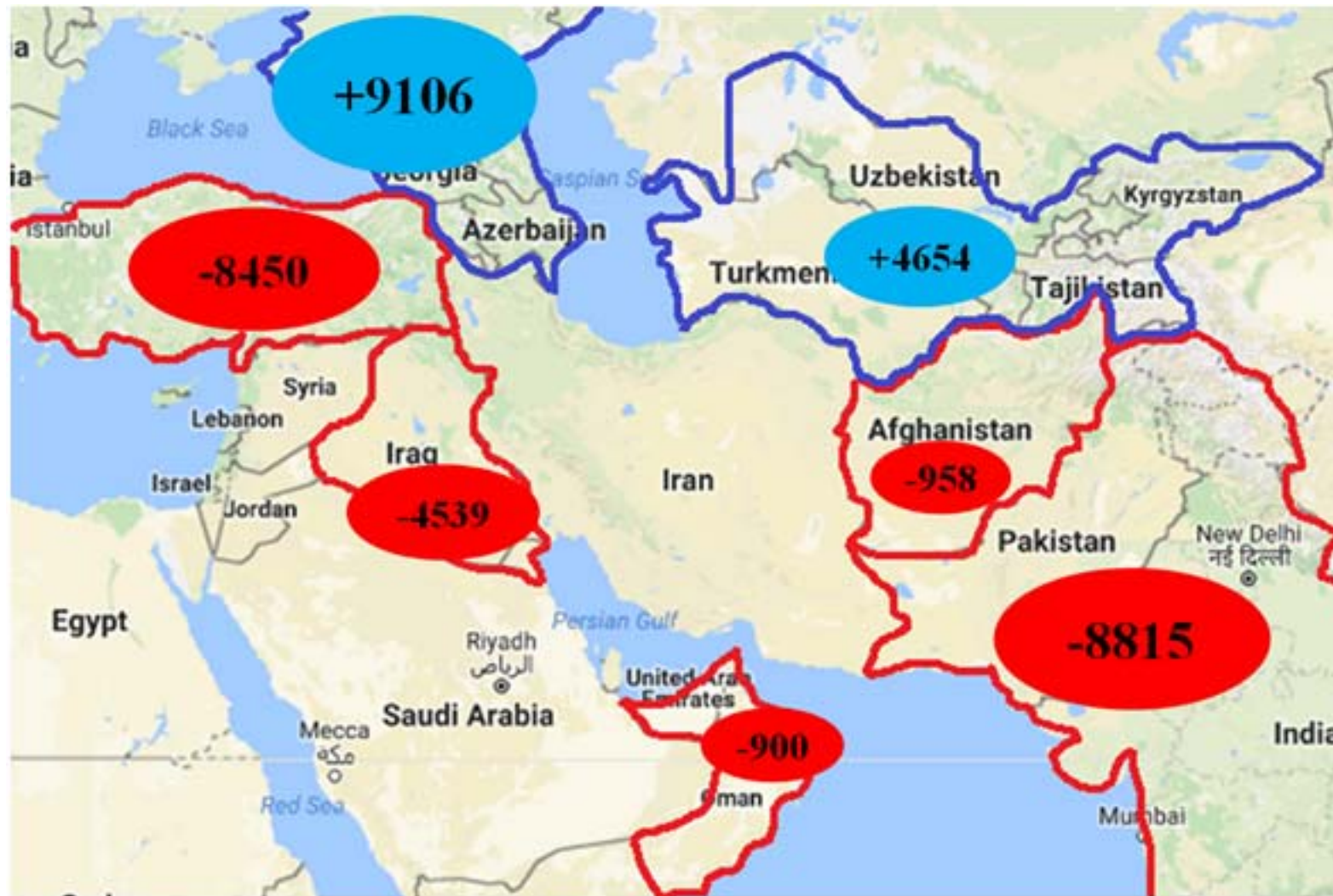


Operational and Executive Suggestions

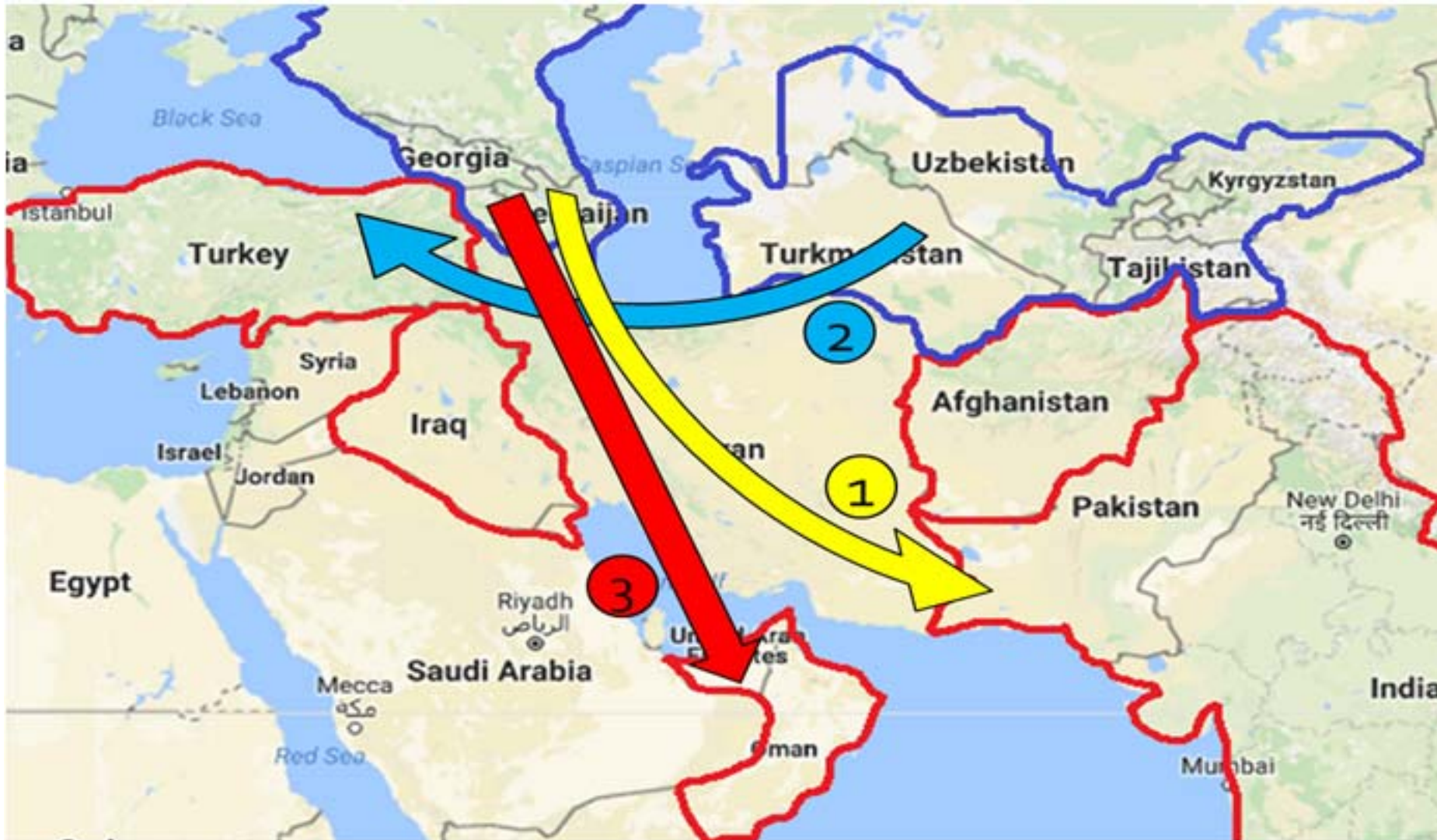
- 1- Detailed and comprehensive energy studies in neighboring and regional countries of Iran in order to capture the potential of production and consumption (surplus and shortage)
2. Market studies and LCOE of all kinds of electricity production in the Iran region countries to understand the production advantages
- 3- Study of network infrastructures and transmission of high electric power in the countries concerned
4. Consideration of Iran's political and economic interactions with the countries concerned for the development of economic exchanges

Case Study

A Scenario of Surplus and Shortage of Electricity Around Iran (MW)



Initial Overview of Electric Power Transmission Corridors Crossing Iran



Summary and Conclusion

1. Electricity as a commodity is becoming more and more accepted in macroeconomic economies of the day, and electricity markets are expanding daily for the commodity.
2. Iran is a country that has many comparative advantages for trading this strategic commodity and entering the regional electricity market, which with proper planning can play its role in this market.
- 3- In this regard, in realizing the macroeconomic policy of resistance, the realization of Iran's role as an electric power hub in the region is important.

Summary and Conclusion

4. But the conventional view for the realization of the electric power hub for Iran, the increase in production capacity and, consequently, the increase in electricity exports, which can not be the only option, given the relative advantages of Iran.
5. The strategic position of Iran for the transit of electricity and the opportunity to enter the electricity trade in the region is one of the most important solutions that can be used to create a hub of Iranian-dominated electric energy.
6. In this path of planning the establishment of a power market with the center of Iran or entering the regional electricity markets, it can provide a clear perspective for the future of the country's electricity trade.