Eighth Annual Workshop on Greenhouse Gas Emission Trading

Paris, 22 - 23 September 2008

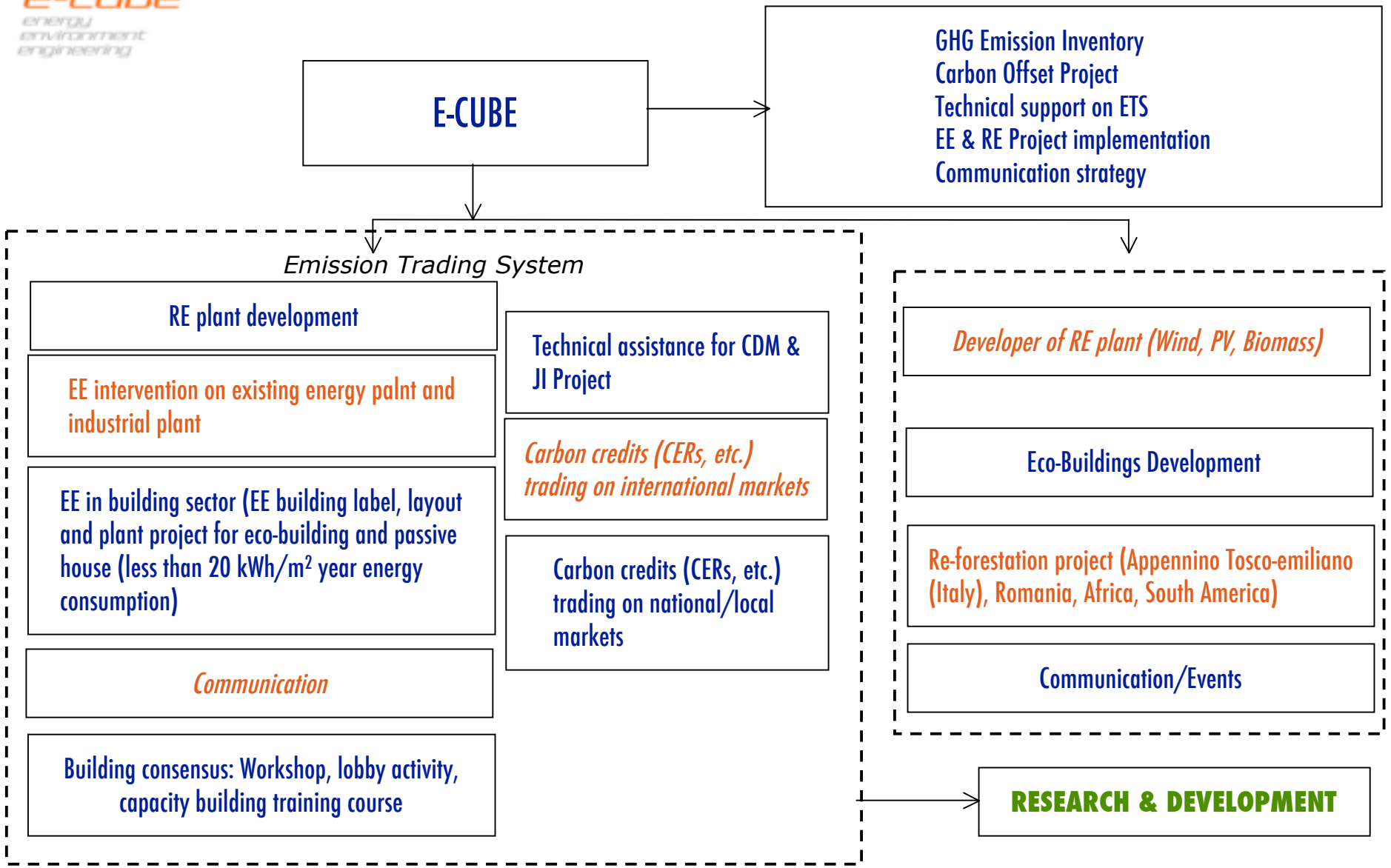
Session 5 – Overlapping Policies with GHG Emissions Trading Schemes

Renewable Energy Cooperation Certificate (RECC)

Aldo Iacomelli

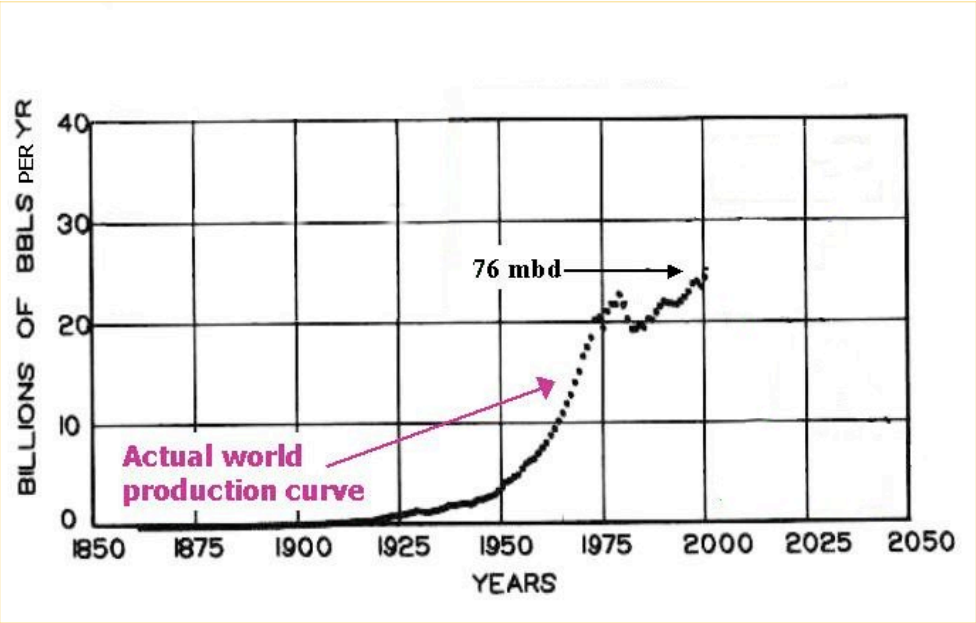
CEO, e-cube

Activities


E-CUBE
GHG Emission Inventory
Carbon Offset Project
Technical support on ETS
EE & RE Project implementation
Communication strategy
Emission Trading System
RE plant development
EE intervention on existing energy palnt and industrial plant
EE in building sector (EE building label, layout and plant project for eco-building and passive house (less than 20 kWh/m² year energy consumption)
Communication
Building consensus: Workshop, lobby activity, capacity building training course
Technical assistance for CDM & JI Project
Carbon credits (CERs, etc.) trading on international markets
Carbon credits (CERs, etc.) trading on national/local markets
Developer of RE plant (Wind, PV, Biomass)
Eco-Buildings Development
Re-forestation project (Appennino Tosco-emiliano (Italy), Romania, Africa, South America)
Communication/Events
RESEARCH & DEVELOPMENT

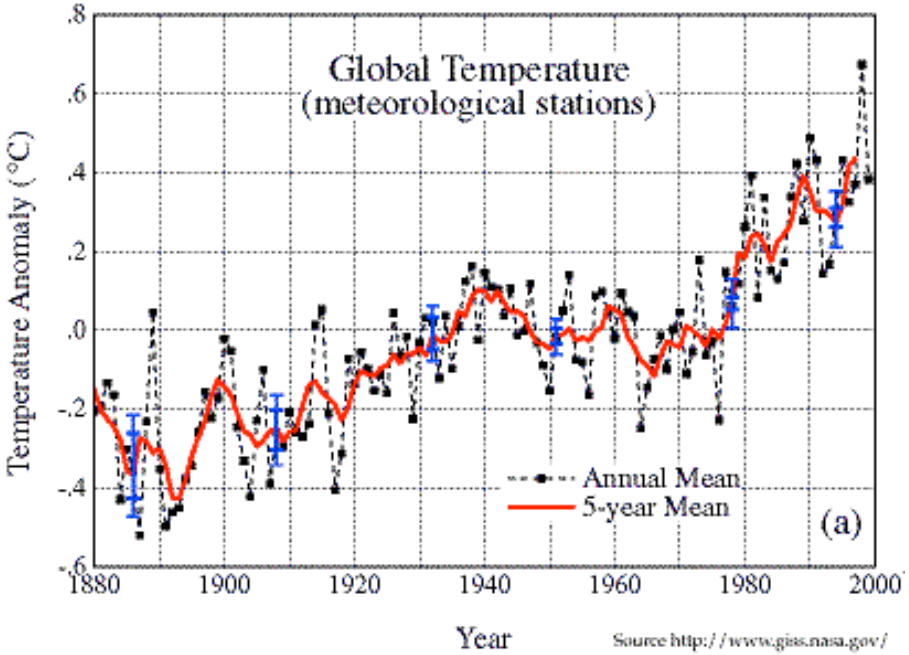
THE DRIVERS

Crude Oil Production & price



www.hubbertpeak.com

Climate Change



IPCC data

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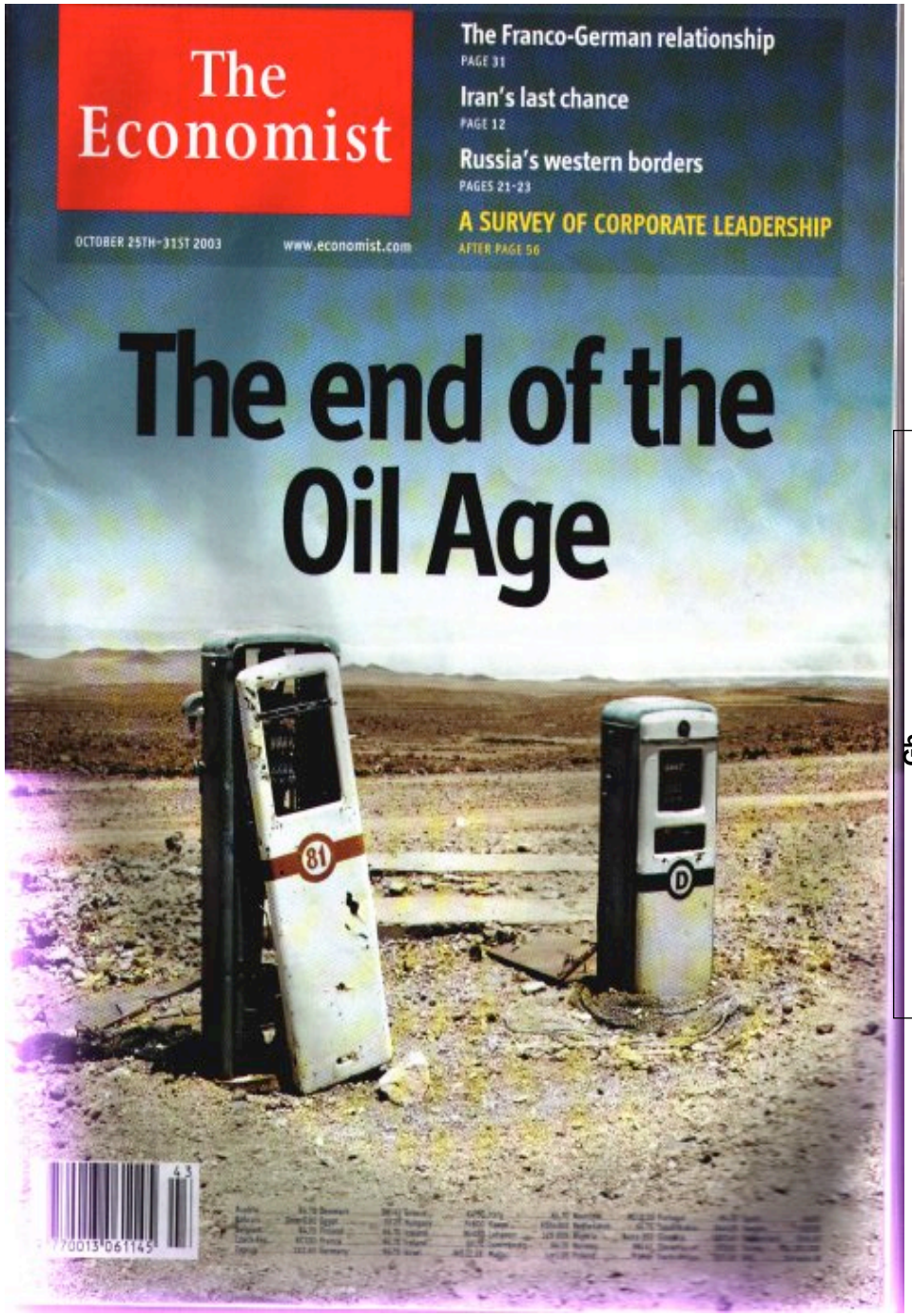

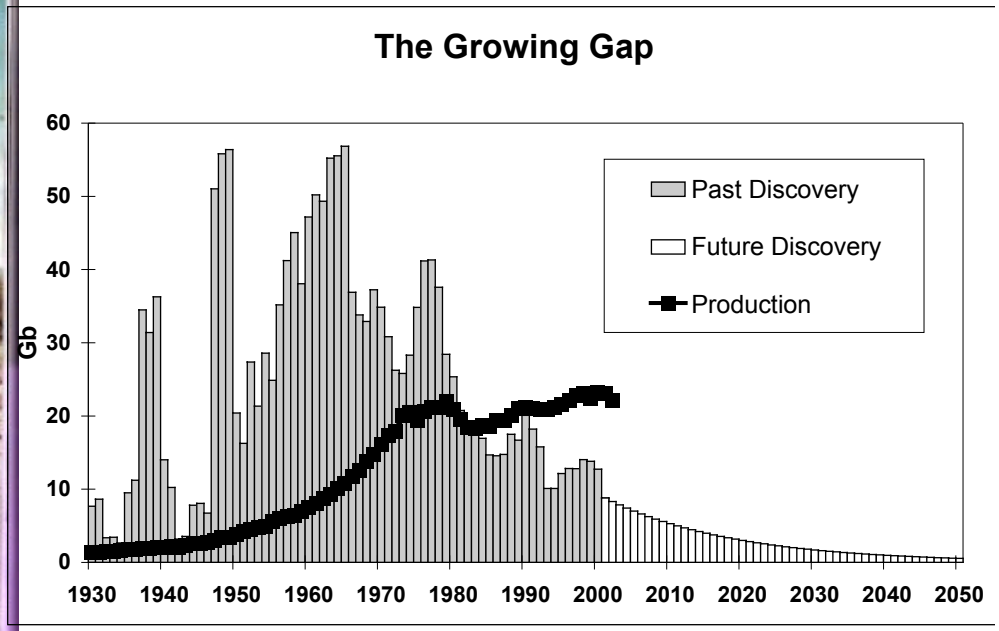

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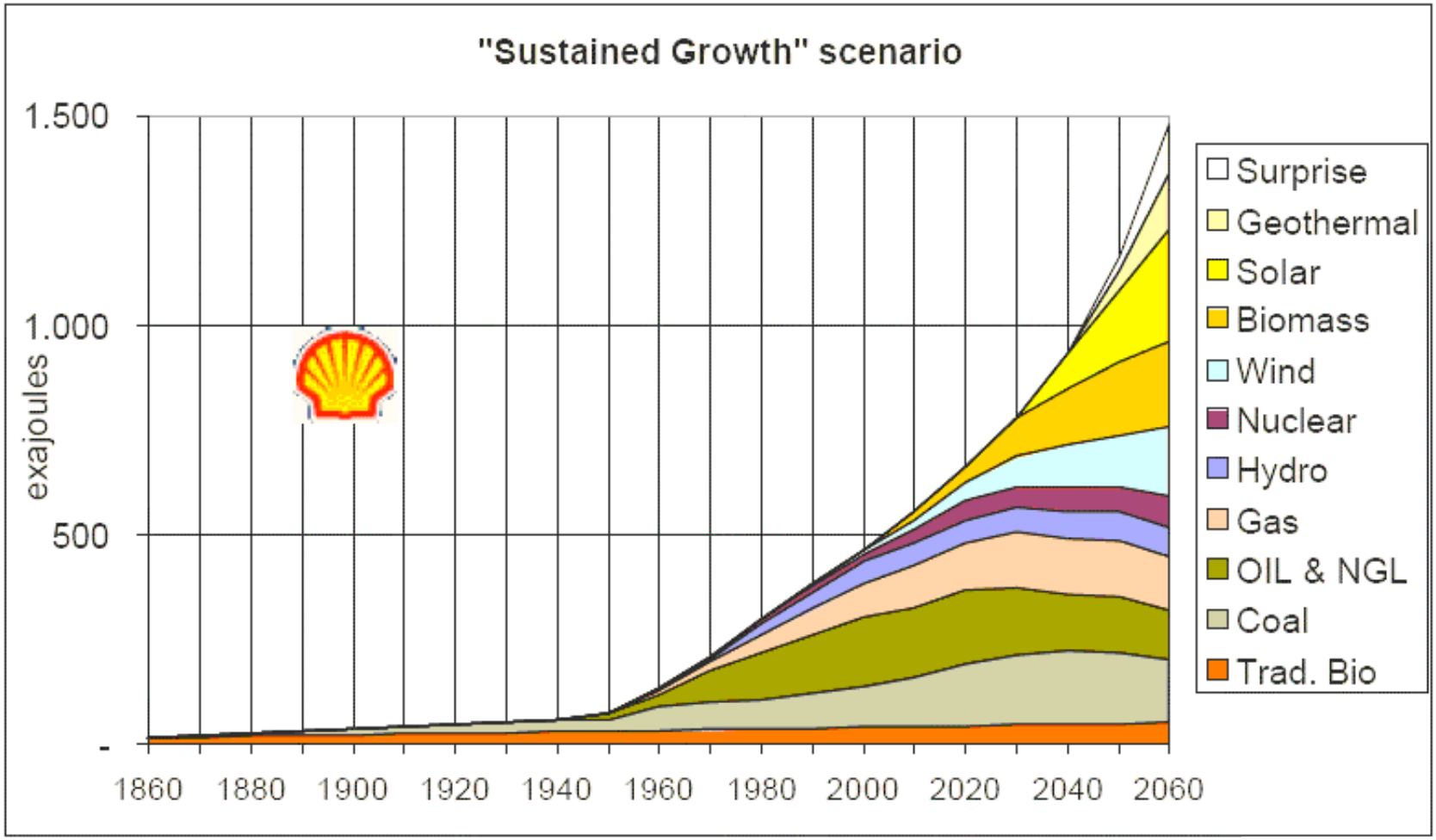
EE & RE are on the way and soon will be in the old economy as well



Fonte: Shell

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- Energy is fundamental for the development, and EU Cooperation Programmes give to energy in developing countries a primary role.

- The Renewable Energy (RE) production is twice relevant because:

  - ✓ doesn't produce negative social & environmental impacts;

  - ✓ at the same time help "low per-capita income and slower development" Countries (so called developing Countries) to implement sustainable energy project that is not strictly linked with fossil fuel market price volatility.

- Cooperative projects for RE electrification will represent so a strategic element to reach the above two important targets

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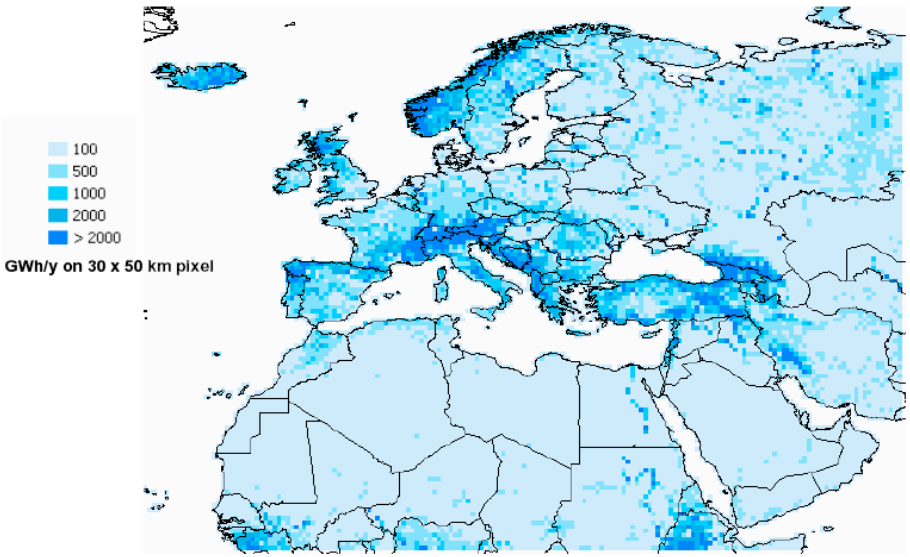
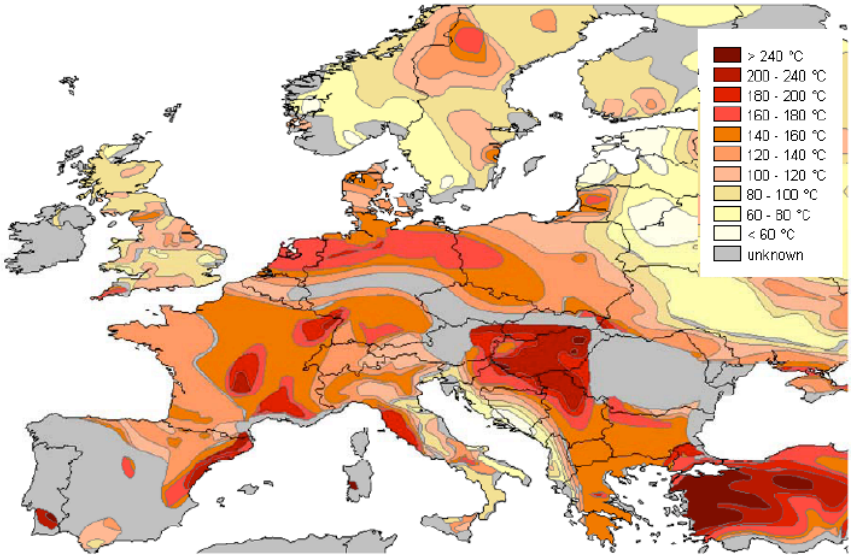
- The RE potential in the European, North African and Middle East Regions, with the aim to an integrated and distributed energy generating system, is huge. (Trans Mediterranean Renewable Energy Cooperation - DESERTEC)

HYDRO



GEOTHERMAL



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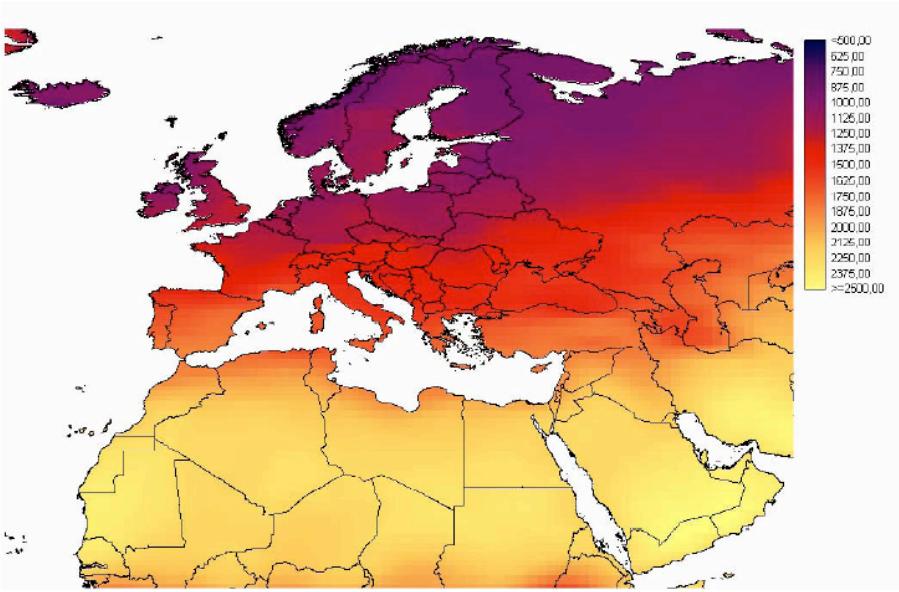
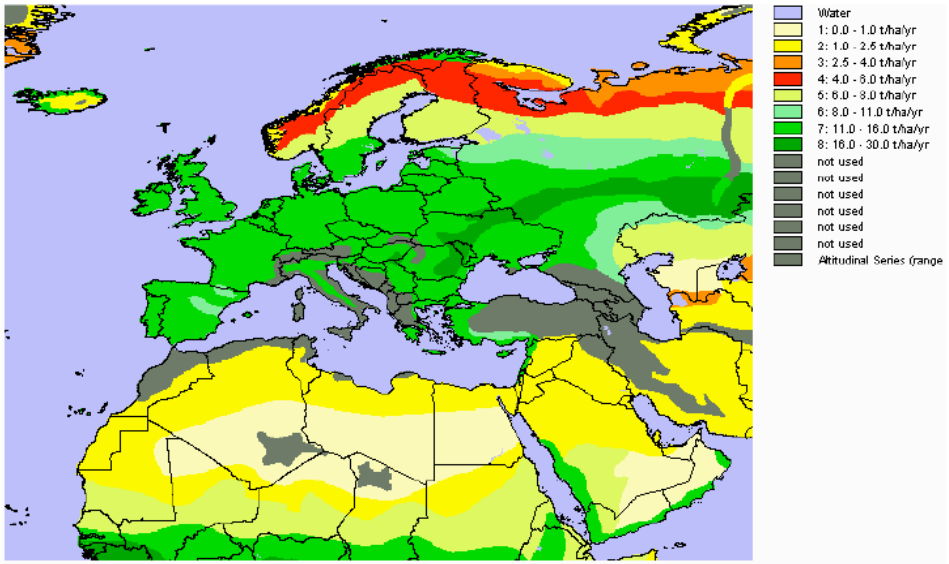
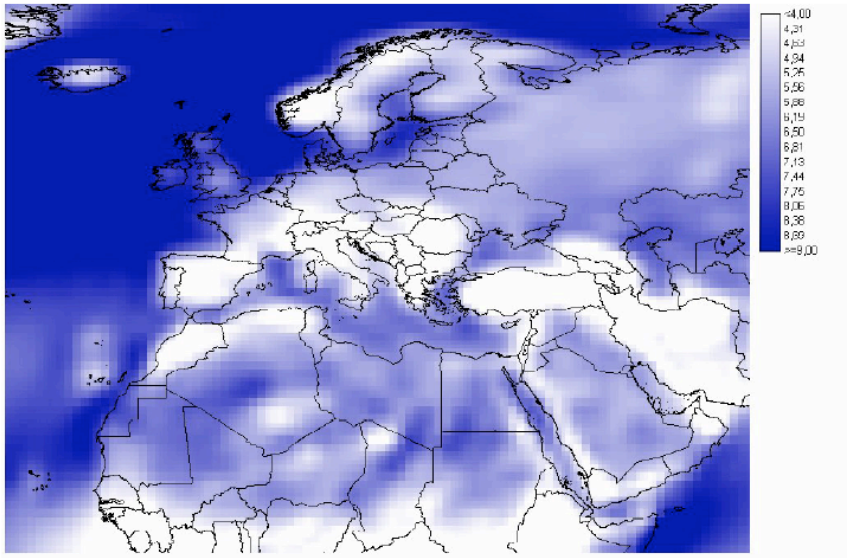
SOLAR

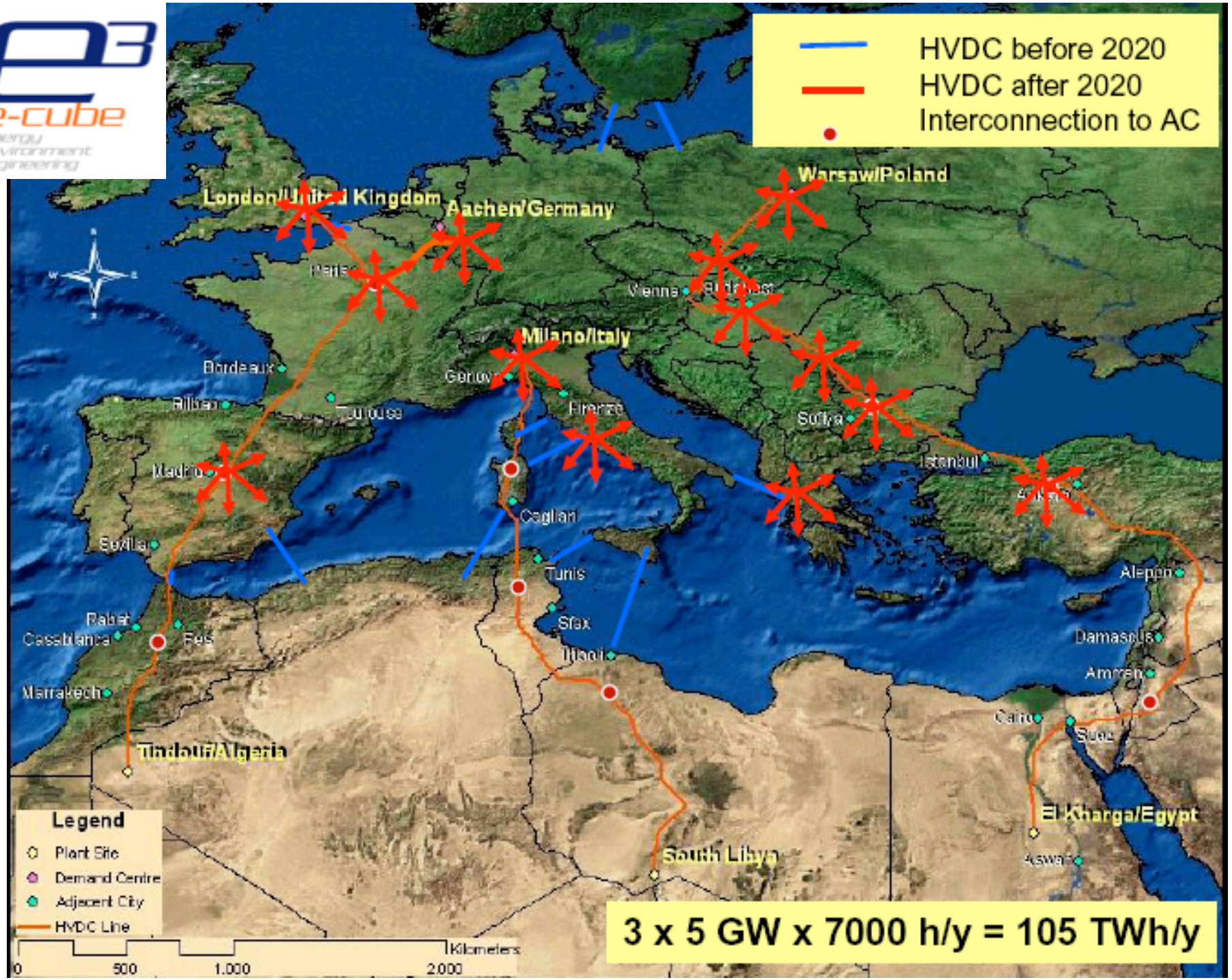


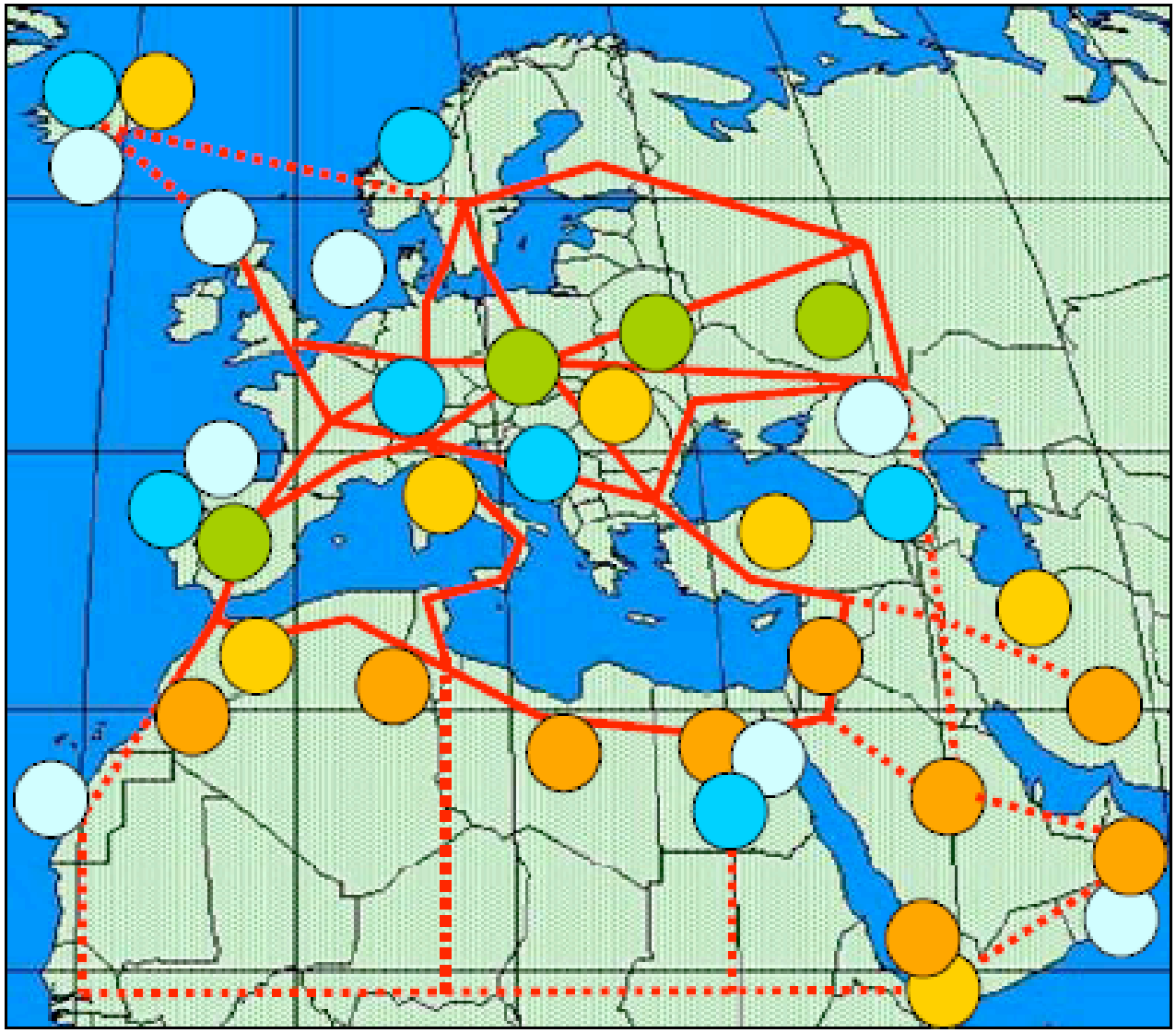
BIOMASS



WIND ENERGY




HVDC before 2020
HVDC after 2020
Interconnection to AC
London/United Kingdom
Aachen/Germany
Warsaw/Poland
Milano/Italy
Bordeaux
Bilbao
Madrid
Sevilla
Rabat
Casablanca
Fes
Marrakech
Tindouf/Algeria
Cagliari
Tunis
Sfax
Illaoi
South Libya
Sofya
Istanbul
Aleppo
Damascus
Amman
Cairo
Suez
El Kharga/Egypt
Aswan
Legend
Plant Site
Demand Centre
Adjacent City
HVDC Line
Kilometers
0
500
1.000
2.000
3 x 5 GW x 7000 h/y = 105 TWh/y



Solar

Wind

Hydro

Geothermal

Biomass

EURO-MED

possible further inter-connections

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- The study on DESERTEC concept, although it represents a good solution for energetic cooperation in MENA Region, at the same time don't face some problematic:

1. To solve European energy issues with the delocalization of energy production in the Mediterranean Countries + construction of high voltage distribution grid that will really not solve development problem of countries with "low per-capita income an slower development";

2. It will not be able to cover with capillarity all population of MENA and Mediterranean Region;

3. It will be the future infrastructure that will permit the delocalization of negative externality of energy power production (POLLUTION) in North African countries for European energy needs through the future grid inter-connection.

- The solution would so enforce difference between Northern and Southern Mediterranean Region

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- Our study has been implemented to give the answer and the instrument that could operate with DESERTEC EU-MENA super-grid and at the same time try to solve the contradiction explained.

- The solution is to provide energy also to that part of population that will not have the possibility to be linked to distribution grid or that is not part of EU energy market.

- In this way Renewable Energy Cooperation Certificate (RECC) will represent the economic and financial support for Energy Cooperation Programs:

  - ✓ they will assure continuity and high performances;
  - ✓ they will give a real support to “low per-capita income an slower development”;
  - ✓ with transparency and efficiency;
  - ✓ without grid connection;
  - ✓ they will help international Local Development with financial and technical support.

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Renewable Energy Cooperation Certificates (***RECC)***

As showed before RECCs would help the Euro-Mediterranean cooperation using a market based mechanism to finance cooperation programs.

RECC are infact certificates that assure the sustainable and cooperative nature of energy generation, in developing countries.

To implement such financing support is possible to build two different scenario with two different legal and technical framework:

- ***1st scenario: AMENDMENT OF 77/2001 EU DIRECTIVE and possibility to use RECC in European Energy Market;***
- ***2nd scenario: off grid Energy generation projects;***

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RECC: 1st Scenario

- In this scenario RECC certification system is strictly correlated with traditional Renewable Energy Certificate (GC) mechanism (possibility but not mandatory to be connected with distribution grid).

- **Is so important to integrate cooperation and development in the traditional scheme.**

- Amend European Directive 77/2001 will represent the more efficacious and easy way to operate:
  - ✓ the European Commission proposal for a long-term Renewable Energy Roadmap will give the opportunity to integrate RECC in RECs system;
  - ✓ the possibility to dedicate only 1% of European Target for 2020 to cooperative energy, will permit energy supply of around 60 TWh of cooperative energy.

- Effectively the integration will be possible only as result of a future release of "Principles and Rules of Operation" approved by "Association of Issuing Bodies" and then acknowledge by each EU countries for national application.

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RECC: 1st Scenario

In the RECC scheme, the life cycle of certification is:

- ISSUEING
- TRADING
- COMPLYING

➢ The most relevant differences will concern the RECC emission and the geographical localization of participants:

– **Players belonging to host countries will have crucial importance:**

1. **host countries will be the only beneficiary;**

2. **coordination and information exchange among European and North African players must be strengthened.**

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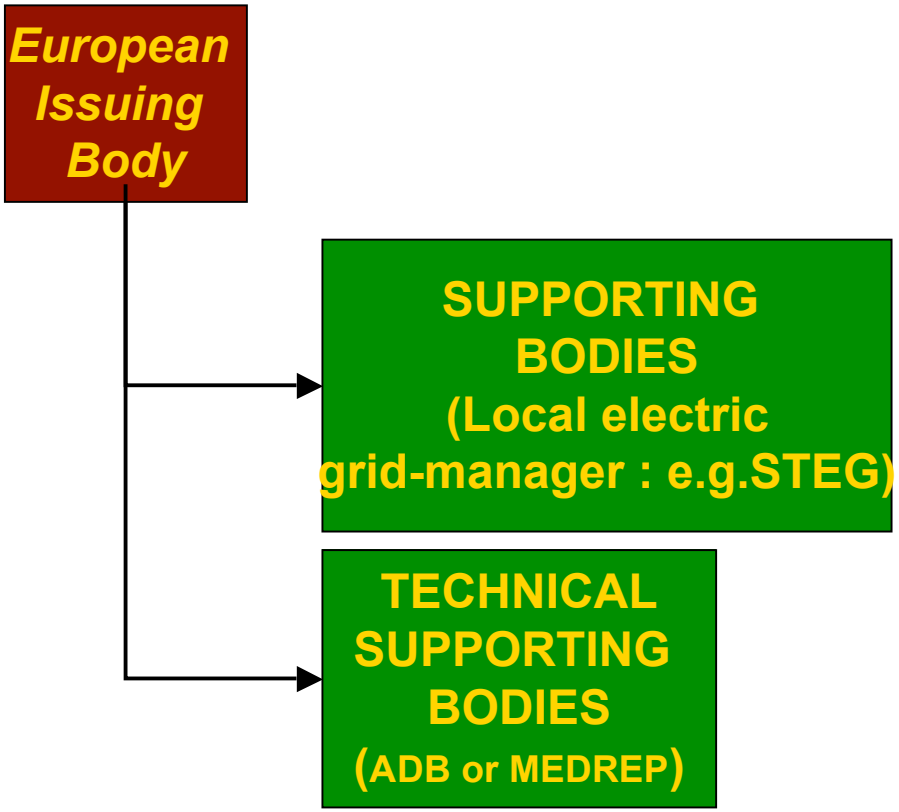
RECC: 1st Scenario



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RECC: 1st Scenario

- The most relevant difference with GC will concern the protocol of application:

1. it will have an European relevance rather than national;
2. the European Issuing Bodies (EIB) will be responsible of issuing, registration, trading and complying of RECCs;
3. the EIB will commit to national entity some functional roles;
4. the EIB will decide and publish the conditions of compliance to RECC system and:

   - **release to every registered plants an unambiguous registration code;**
   - **the responsible of each plants must ensure that electricity will be used by local population and will contribute to the improvement of the quality of life (equity & social development)**

- EIB will also provide to issue the certificates with a strict collaboration of local distribution grid operators and with international organisms (e.g. for North African Countries MEDREP) that will have the role of external controller.

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RECC: 1st Scenario

- The SUPPORTING BODY (SB) will:
  - **measure the quantity of electricity produced and put in to the distribution grid for the correct imputation of certification;**
  - **guarantee that energy produced will be delivered to local population;**
  - **identify and control players who will implement projects.**
- The TECHNICAL SUPPORTING BODY (TSB) will represent the connection between SB and local communities:
  - **help and support SB to guarantee cooperative characteristic of energy production;**
  - **operate as stakeholder with authorities of host countries for the most effective location of intervention;**
  - **valuate the effectiveness of projects through direct survey of development index;**
  - **Could operate as financial support for project implementation.**

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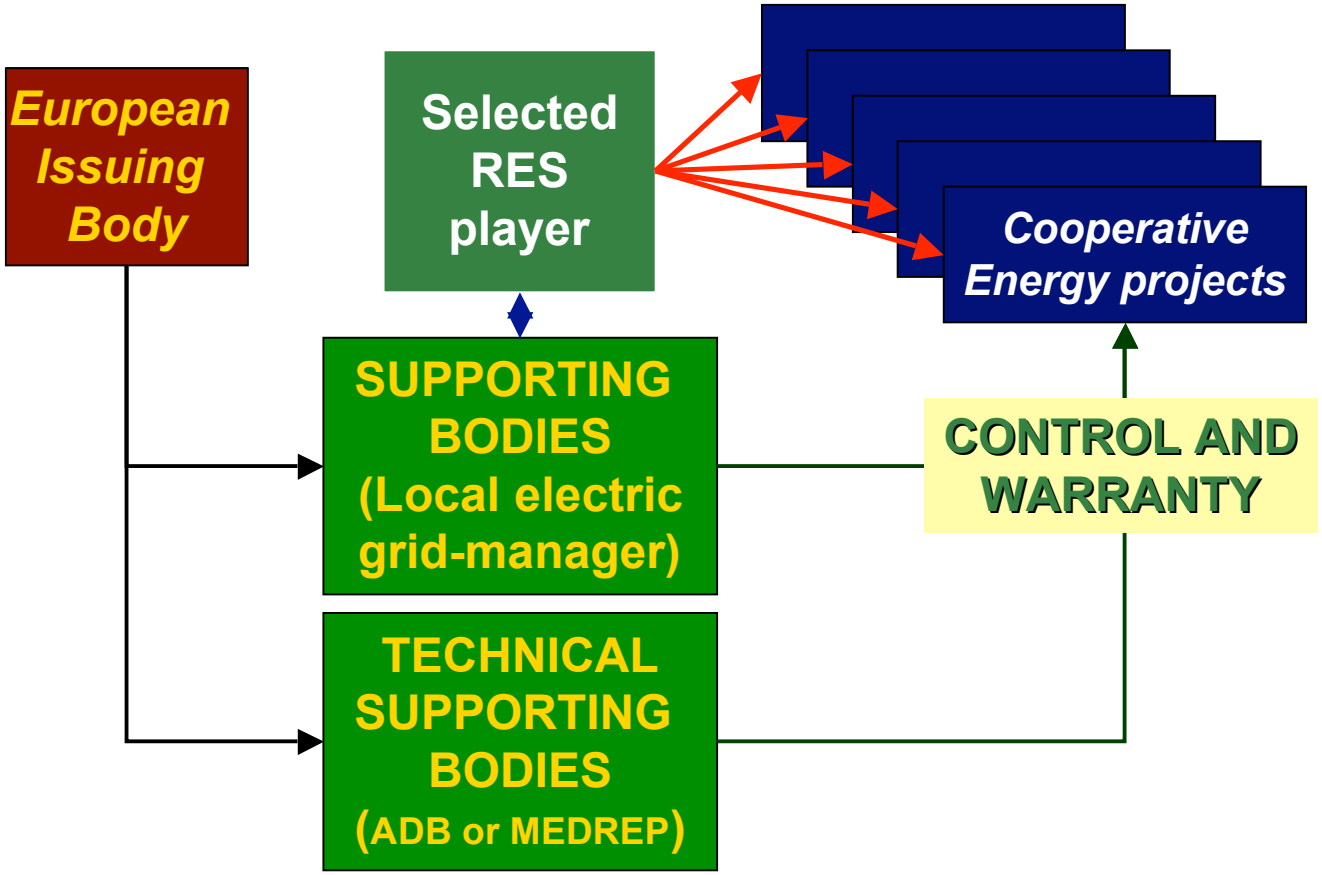
RECC: 1st Scenario



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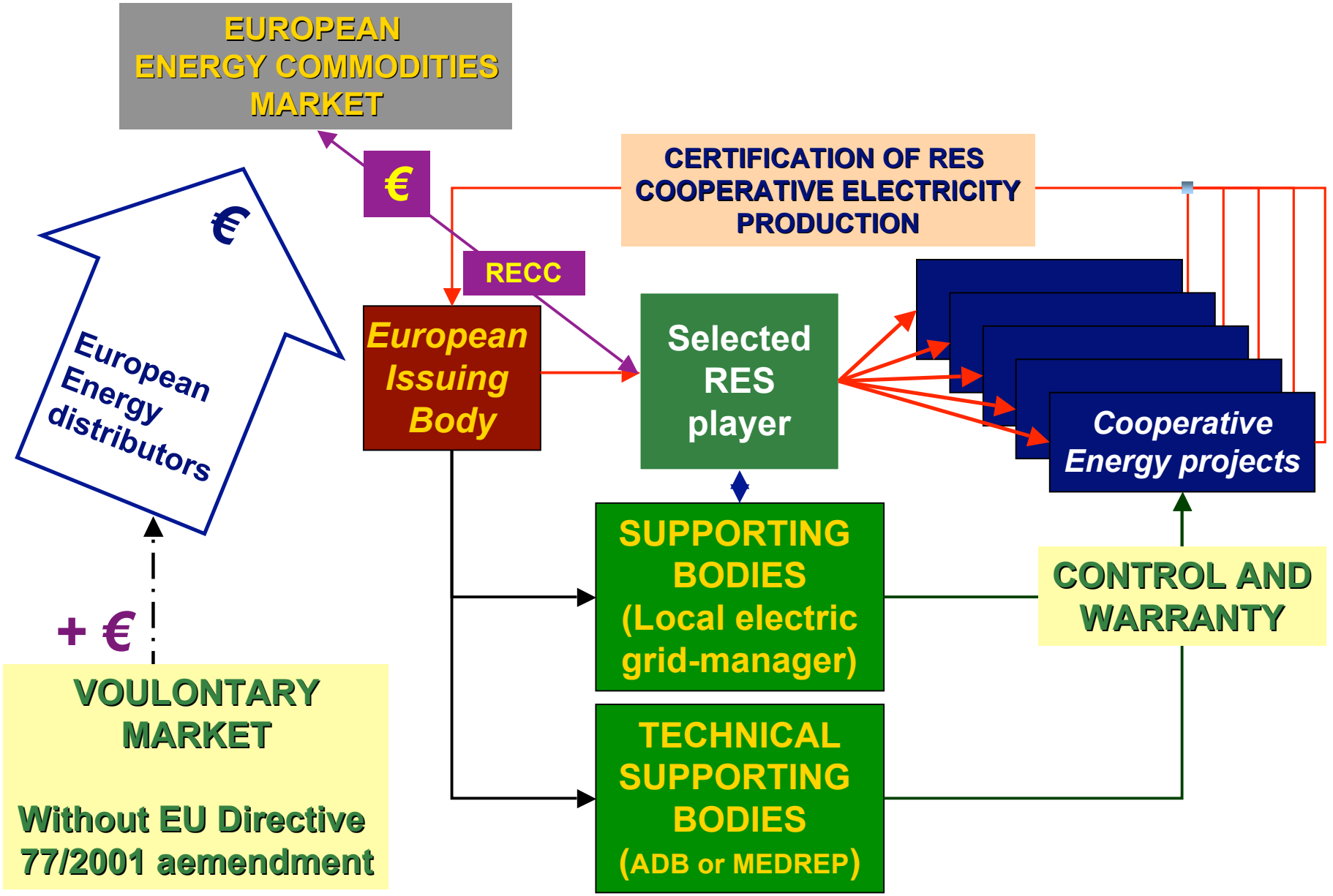
RECC: 1st Scenario

- Final beneficiaries of certification scheme are local populations, with:
  - better availability of energy without supporting investments costs;
  - same cost for purchasing electricity as the average of the host countries, also for rural and affordable locations;
  - availability of clean and sustainable energy;
  - Improvement of life quality.

- Final purchaser of RECCs are European Energy distributors. They will operate in the energy commodities market to:

1. reach the target of production of RE deriving from EU directive obligation;
2. trade in the European voluntary market (TRECs etc.etc)

RECC: 1st Scenario



RECC: 2nd Scenario

The second scenario will operate in under developed and remote areas and so contribute to Millennium Development Goals.

This second scenario of implementation of RECC scheme want to develop renewable energy generation in very difficult contexts in which energy availability for local population is insufficient and grid connection with main distribution grid is impossible.

To reach this target is important to characterize “COOPERATIVE ENERGY” with the following features:

1. the certification mechanism is not linked to the presence of National Distribution Grid;
2. consumption of energy generated only by local communities;
3. to build a local system related to MICROCREDIT developing strategy;
4. give impulse to local development trough more sustainable and secure energy system;
5. projects’ implementer will assure that the energy will not be offered to local population, but will be sold and reinvested in the territory paying all services related to the project (e.g. surveillance and maintaining) and for formative programs for locals to carry out such services.

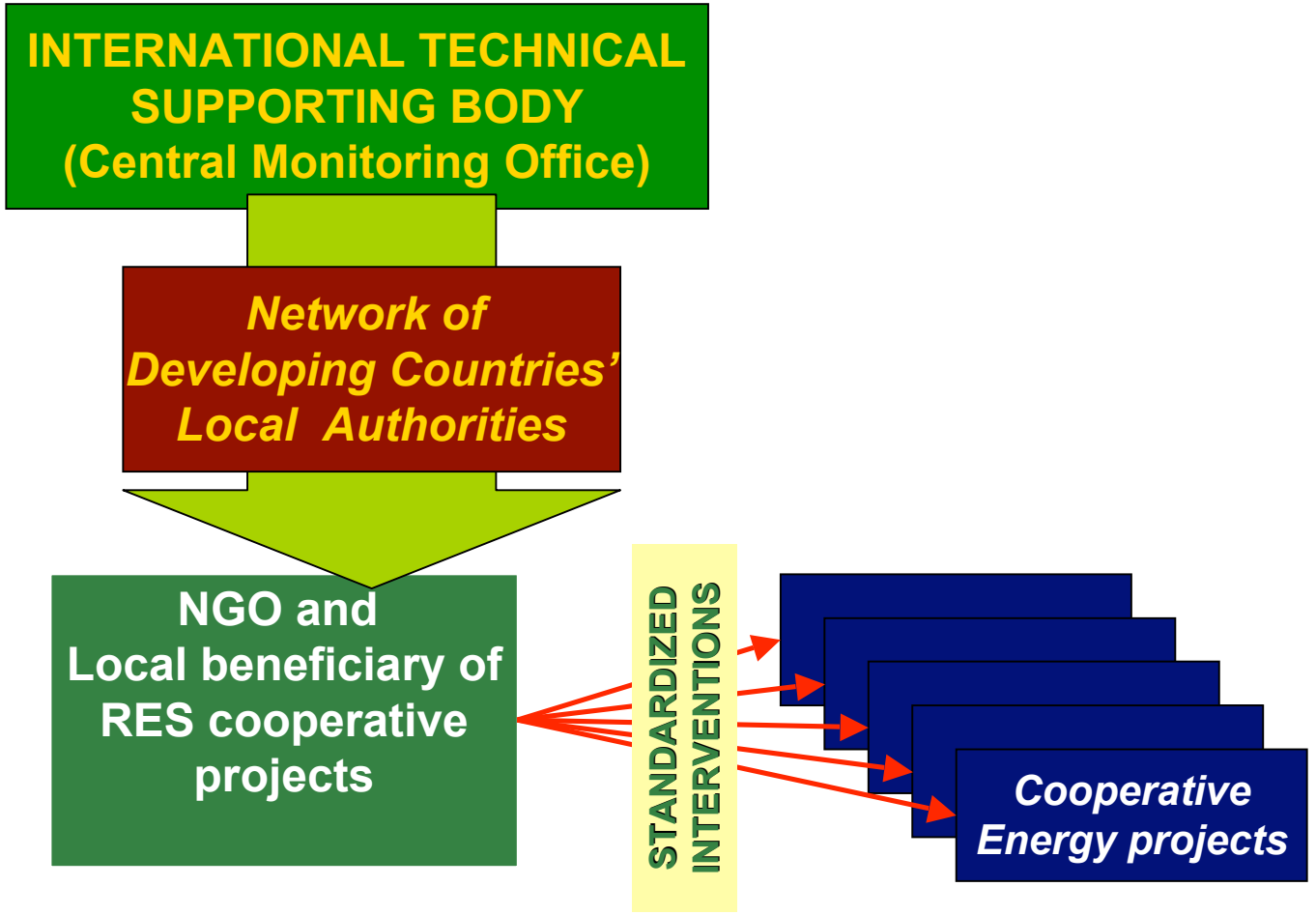
RECC: 2nd Scenario

The main actor of this certification mechanism is one selected “International Technical Supporting Body” ITSB that will represent the focal point for other players:

- ✓ In accordance with local Authorities will provide to the specification and location of projects;
- ✓ It will monitor the implementation of the projects and will evaluate the benefits through particular index of sustainability;
- ✓ It will organize RECCs market;
- ✓ It will evaluate the effects of interventions

The ITSB will have direct control and contacts with selected operators that will implement on the territory the cooperative energy projects (i.g. NGO, NGI, and other operators) through standardized interventions with the same mechanism of white certificate for energy efficiency programs.

RECC: 2nd Scenario



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RECC: 2nd Scenario

- The White Certificates system will represent the best benchmark for the application of RECC:
  - White certificates is not linked with the connection to distribution grid;
  - In Italy the evaluation of energy savings is achieved through standardized intervention that will permit the predetermination of the results without subsequent measurements;
  - The mechanism operates totally on a web based platforms, permitting in this way the best operativity for inter-boundaries projects;

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RECC: 2nd Scenario

Very peculiar is the operability of RECCs Market, a cause of the different financial structure in comparison with other certification structure:

- At year “n” the ITSB will determinate where and how Projects will be implemented during year “n+1”, and how many financial support is necessary to implement them;
- ITSB at year “n” will sell X kW_{coop} of so called *MILLENNIUM ENERGY*, in the voluntary energy market in Europe;
- The revenues for selling X kW_{coop} will permit the implementation of energy cooperative during year “n+1” projects certified by RECC;
- The price of each RECC will be an additional subsidy for Organization that are involved in developing countries in the projects

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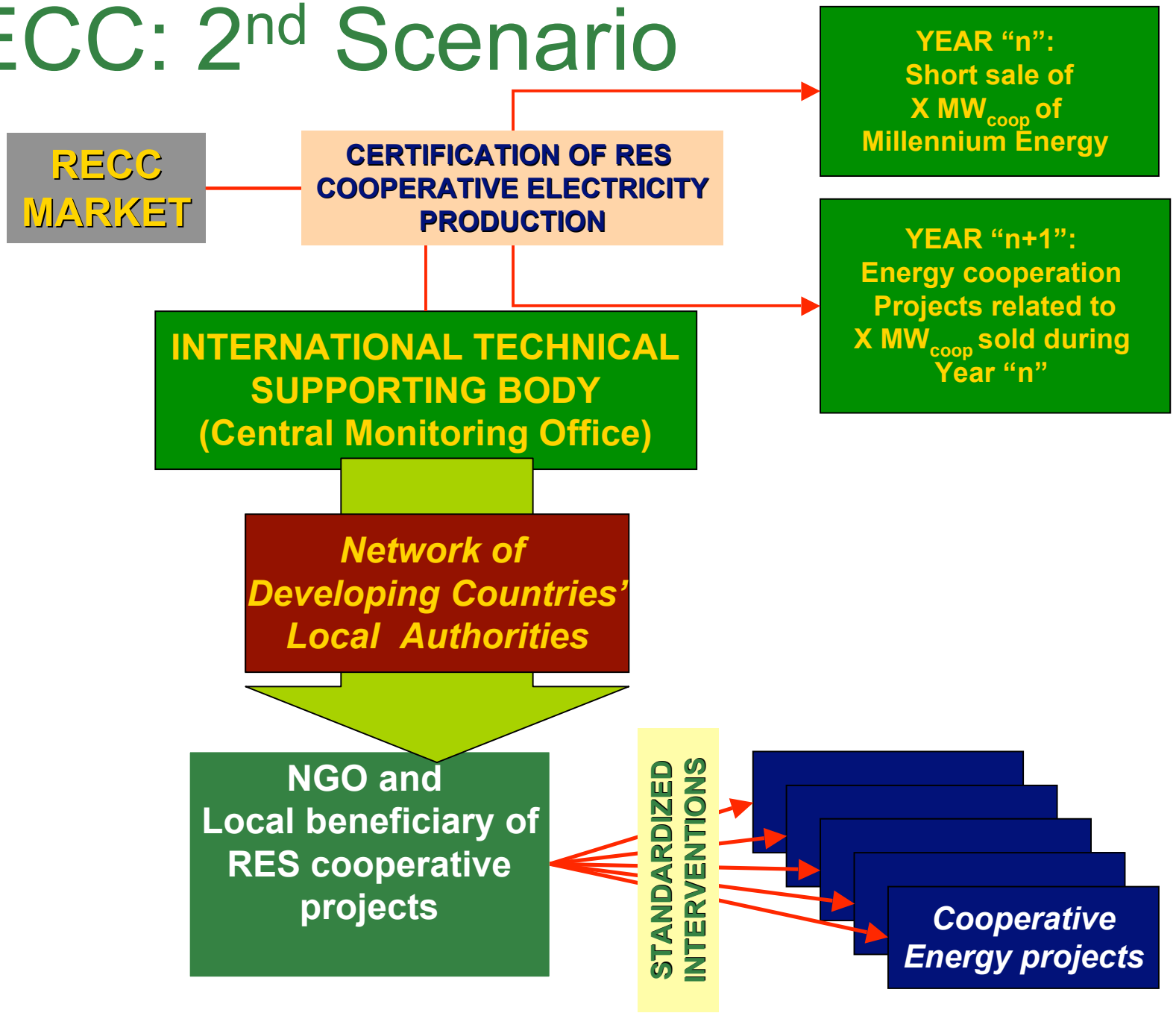
RECC: 2nd Scenario



RECC: 2nd Scenario

Final purchaser of RECC will be European Energy distributors that will sell in this way MILLENNIUM ENERGY in European market of Electricity:

- with the liberalization of energy markets, distributors can differentiate their offer of products with renewable cooperative energy, aiming to the voluntary market that in this last decade is growing faster (e.g. Fair Trade, GREEN ELECTRICITY, Green Public Procurements)

- The purchaser that will buy Millennium Energy will be sure that his consumptions will not have impacts on the environment and at the same time will contribute to the development of developing countries.

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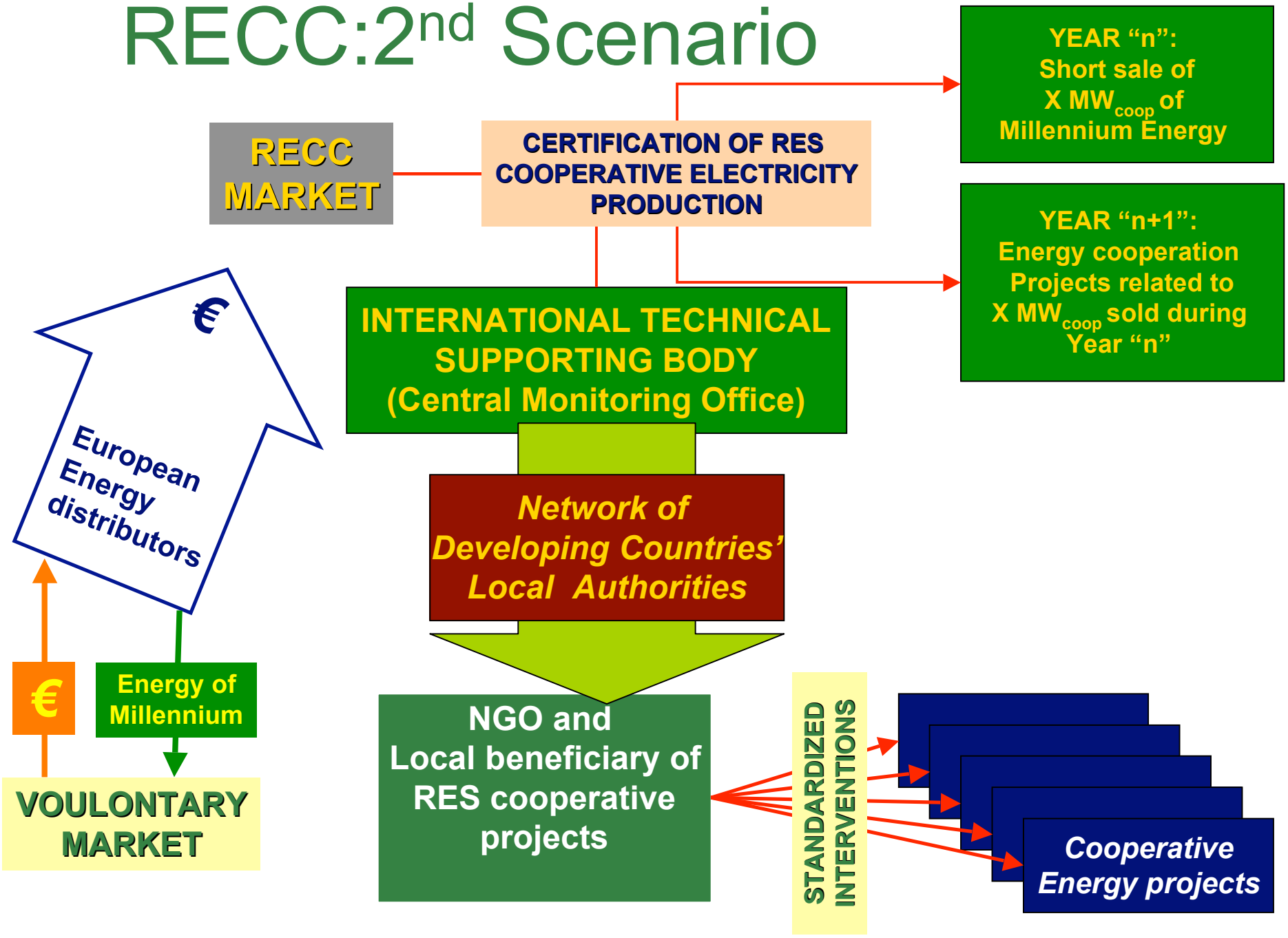
RECC:2nd Scenario



- In this direction European countries started to cooperate to build in North African and Mediterranean countries an energy sector that will replicate European model and will also integrate European energy market;

- The **T**rans-Mediterranean **R**enewable **E**nergy **C**ooperation (**TREC**) is such an initiative that campaigns for the transmission of clean power from deserts to Europe.

- The founders are:
  - Club of Rome
  - Hamburg Climate Protection Foundation
  - National Energy Research Center of Jordan (NERC)

- The base concept developed is DESERTEC a study implemented in cooperation with the German Aerospace Center (DLR).

- Now TREC is working to make this concept a reality in cooperation with people in politics, industry and the world of finance.

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- Based on energetic potential of EU-MENA Region is so possible to build what they call a **Euro-Supergrid with Grid Connection:** a future infrastructure for a sustainable supply of power to **EU**rope, the **M**iddle **E**ast and **N**orth **A**frica (**EU-MENA**).

- **With the physical connection through a trans Mediterranean high voltage distributing cable, the** DESERTEC Concept of TREC will permit:
  - boost the generation of electricity and desalinated water by solar thermal power plants and wind turbines in the **M**iddle **E**ast and **N**orth **A**frica (**MENA**)
  - transmit the clean electrical power via **H**igh **V**oltage **D**irect **C**urrent (**HVDC**) transmission lines throughout those areas and as from 2020 (with overall just 10-15% transmission losses) to Europe.

- **The technologies** that are needed to realise the DESERTEC concept are already developed and some of them have been **in use for decades**.

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