



# Renewables and market

**Workshop Susplan  
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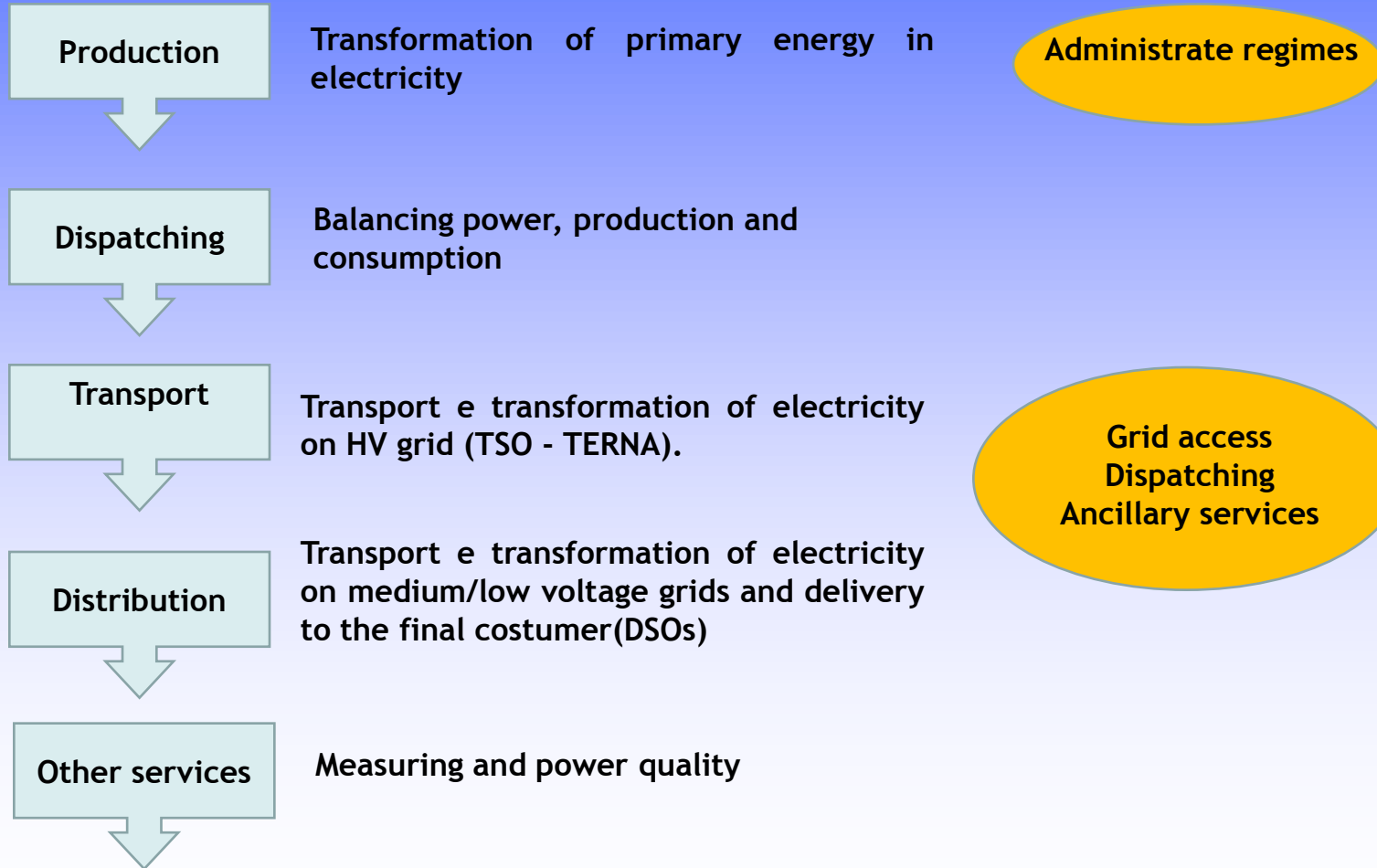


## *Main actors*

- **The Government** - Draws legislative framework and fix guidelines for the sector at national level
- **AEEG** (National Energy Authority) - Regulate the energy sector
- **TSO** - TERNA runs the national transmission grid and the dispatching service
- **GSE** - Responsible for releasing incentives
- **GME** - Runs the Power Exchange Market and the Environmental Markets (CV, TEE)
- **DSOs** – Run distribution grids
- **Regional and Local Institutions** - Apply law framework at local level and issue authorisations



## *AEEG actions for RE power*



## Fundamental themes for production

		<i>Who regulates</i>	<i>Who is in charge</i>
	<b>Authorisations</b>	Regions (State only for capacity in excess of 300 MWt and wind off shore)	Regions (State only for capacity in excess of 300 MWt and wind off shore)
<b>Access to the grid</b>	<b>Connection</b>	Regulatory Authority for Electricity and Gas	DSO or TSO
	<b>Trasmission and dispatching</b>	Regulatory Authority for Electricity and Gas	Trasmission: DSO or TSO
		Regulatory Authority for Electricity and Gas	Dispatching: Terna
	<b>Measurement</b>	Regulatory Authority for Electricity and Gas	DSO or TSO
<b>Selling or on-the-spot trading</b>	<b>Selling</b>	Regulatory Authority for Electricity and Gas	Market or GSE (dedicated withdrawals)
	<b>On-the-spot trading (alternative to market)</b>	Regulatory Authority for Electricity and Gas	GSE
<b>Incentives</b>	<b>Incentives (if defined)</b>	Ministries and Regulatory Authority for Electricity and Gas where defined	GSE



## *Connection rules*

- Priority for REs and CHP;
- Standard connection timing at LV or MV;
- Conventional connection charge at LV or MV (only for REs and CHP). Conventional charges are based on power requested for connection;
- Connection charge for other power plants based on real standard cost. Also in case of connection at HV, connection charges are based on real standard cost (for REs, connection charges are referred only to the real power of the plant, even in case of extra power connection).



## *Grid connections: voltage*

<b>Power</b>	<b>Voltage</b>
up to 100 kW	low
up to 6.000 kW	medium
upper 6.000 kW	high

- Each DSO or TSO can connect at a lower voltage than the one showed in the table: for example, DSO can connect a 120 kW power plant at low voltage.



# Time scheduling and responsibilities (LV, MV)

## TIME

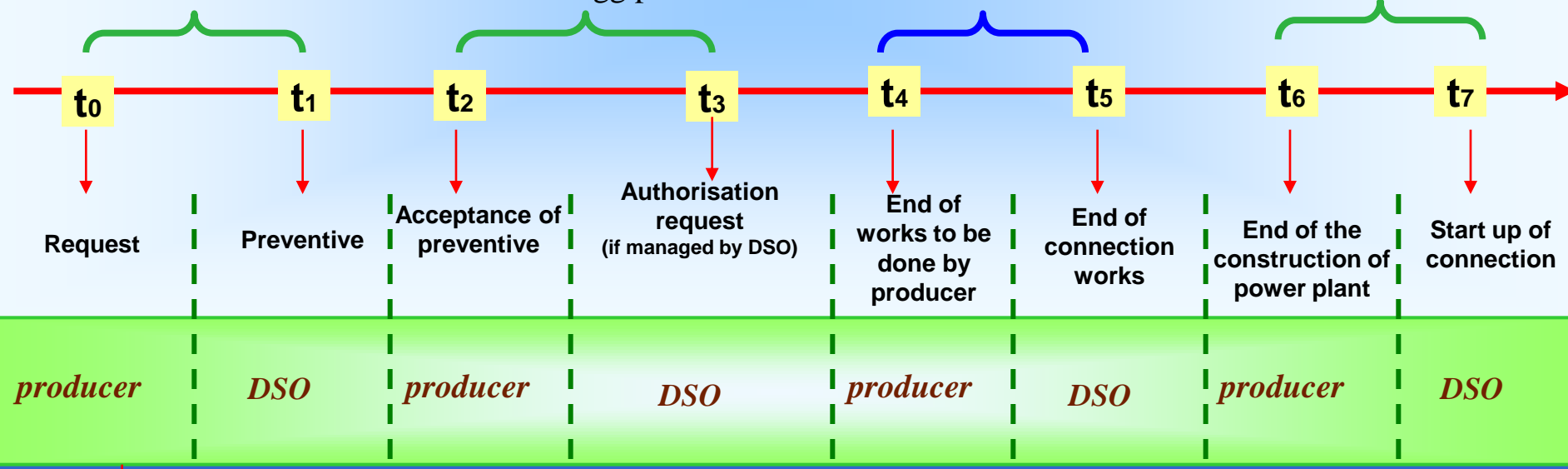
- 20 gg se  $P_i \leq 100$  kW
- 45 gg se  $100\text{kW} < P_i \leq 1000\text{kW}$
- 60 gg se  $P_i > 1000\text{kW}$

- max 30 gg per BT
- max 60 gg per MT

- max 30 gg (simple works)
- max 90 gg (complex works) + 15 gg/km for distances  $> 1$  km

gg = working days

max 10 gg.



## RESPONSIBILITIES

Payment of charge to obtain preventive (from 100 euro to 2500 euro)

Payment of connection charge (30%)

Payment of connection charge (70%)

Registration of the power plant



## *REs and grid access: connection charges*

✓ Connection charge (for REs and CAR) is the minimum between:

$$A = CP_A \cdot P + CM_A \cdot P \cdot D_A + 100$$

$$B = CP_B \cdot P + CM_B \cdot P \cdot D_B + 6000$$

where:

$$CP_A = 35 \text{ €/kW} \quad CM_A = 90 \text{ €/(kW} \cdot \text{km)}$$

$$CP_B = 4 \text{ €/kW} \quad CM_B = 7,5 \text{ €/(kW} \cdot \text{km)}$$

P is the requested power

$D_A$  is a conventional distance between connection point and the nearest transforming station MV/LV

$D_B$  is a conventional distance between connection point and the nearest transforming station HV/MV

✓ Connection charge is increased in the case of cable connection: coefficients CM are duplicated.



## *Simplifications in dispatching for REs*

- Priority in dispatching at the same offer price;
- No penalties in unbalancing charge for not programmable REs (unbalances are evaluated at day ahead price without penalties);
- Dispatching services (such as power modulation, discharges):
  - Compulsory for new wind power plants;
  - Under evaluation for existing wind power plants;
  - No services required for other non programmable REs.



## *Dedicated withdrawals - 1*

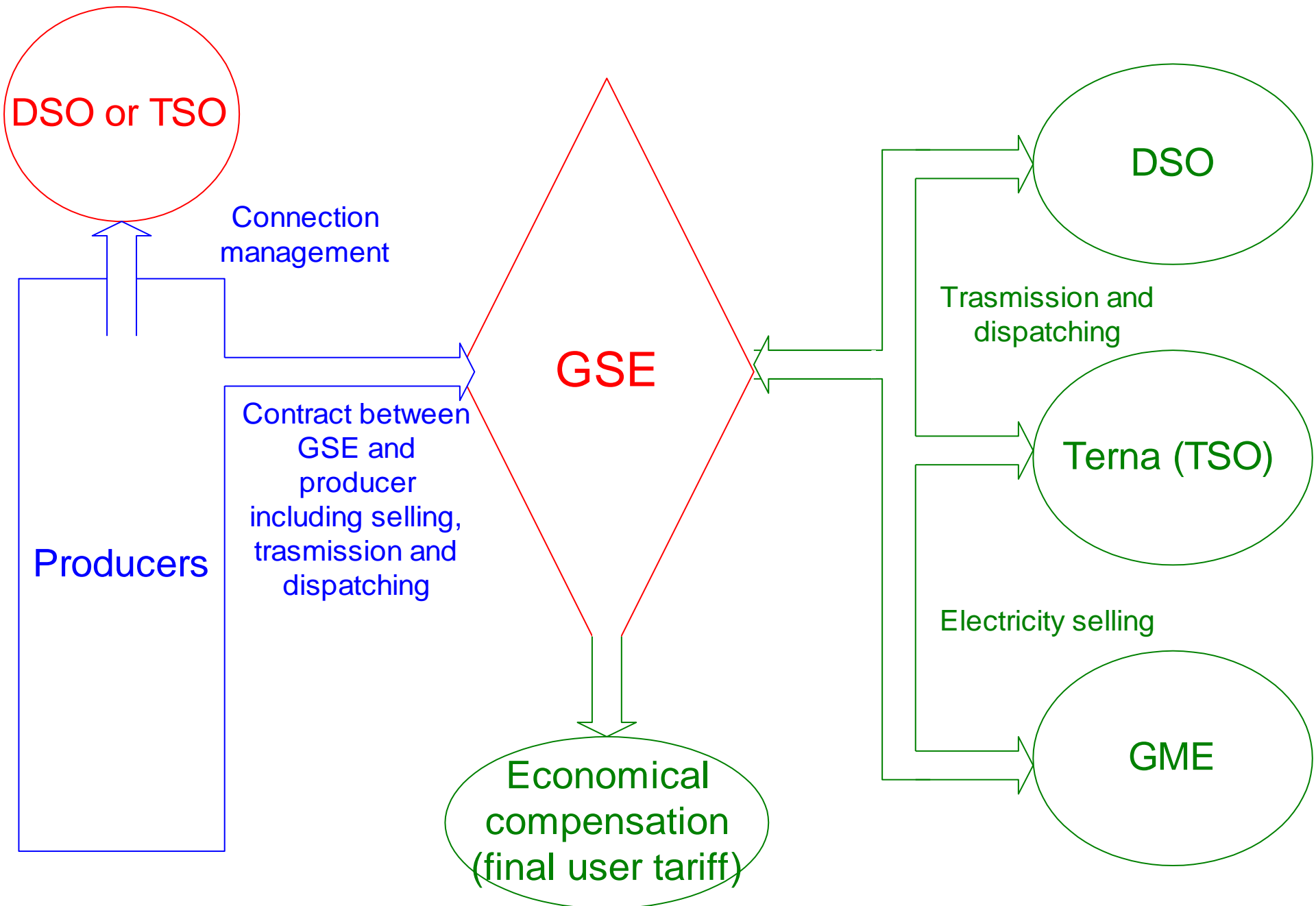
- ✓ It's an “administrative regime”, alternative to bilateral agreements or the Power exchange market (IPEX);
- ✓ it consists of a simplified way of selling the total electricity injected into the grid (it doesn't include incentives);
- ✓ < 10 MVA plants and all non-programmable production from REs;
- ✓ role of dedicated withdrawal service operator to the Gestore Servizi Elettrici (GSE);
- ✓ GSE purchases the electricity produced at the zonal hourly market price and settles all the payments and fees (required for the use of the national grid) with the producers (dispatching service, transmission & distribution services and metering).



## *Dedicated withdrawals - 2*

- ✓ for RES plants up to 1 MW there is a minimum guaranteed price for the production of the first 2 million kWh/year;
- ✓ at the end of each solar year, if the total amount of money paid for electricity at the minimum guaranteed price is smaller than the amount of money for the same quantity of electricity sold on the Day Ahead Market in the same period, GSE pays the difference.

# *Dedicated withdrawals - scheme*





## *On-the-spot trading - 1*

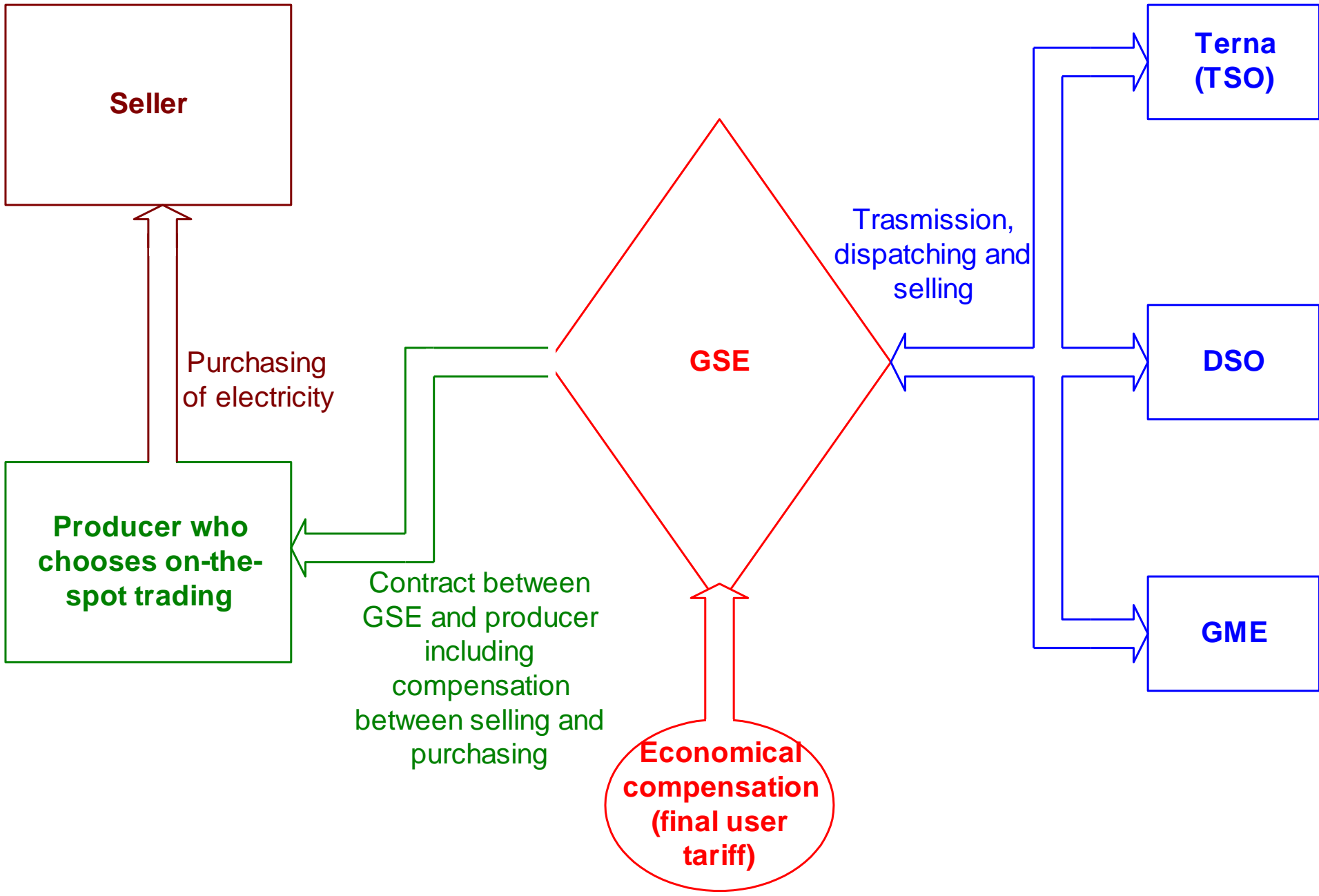
- Plants operating on renewable energy up to 200 kW and high efficiency cogeneration plants with capacity up to 200 kW;
- role of on-the-spot trading operator to the Gestore Servizi Elettrici (GSE);
- economic terms for the service. It doesn't concern electricity withdrawals which continue to be regulated by the sales firms; furthermore a contribution is defined to guarantee that service users receive an equivalence between what they pay for power withdrawn and the value of the power which is injected into the grid;
- the mechanism gives the possibility of injecting the power produced by plants into the grid and to withdraw the same power from the grid at times and on days when they are unable to produce, using the grid as a sort of "electricity tank".



## *On-the-spot trading - 2*

- The energy grant is the sum of two contributions, “quota energia” (energy quota) and “quota servizi” (services quota);
- The “quota energia” contribution allows the users of this service to receive the value of the power they injected into the grid up to the energy costs they pay to the retail service companies which provided electricity;
- If the value of the power injected into the grid is higher than the energy costs, the surplus will be settled in the first year when the opposite situation occurs (deficit);
- The “quota servizi” contribution allows the users of this service to receive an amount of money equivalent to the costs they pay for using the grid for the total amount of electricity exchanged within the grid, just as if that energy hadn't used the grid.

# *On-the-spot trading - scheme*





## *TUP - Testo Unico ricognitivo della Produzione*

- It's a collection of the most important decisions adopted by the Regulatory Authority for Electricity and Gas related to electricity production, above all concerning REs and CHP.
- It's not a new decision but only a collection of the decisions actually in force.

[http://www.autorita.energia.it/elettricità/ele\\_produzione.htm](http://www.autorita.energia.it/elettricità/ele_produzione.htm)

# Access to the grid, electricity selling and incentives

Access to the grid and selling				Incentives		Total
How to sell	Which plants	Contracts to subscribe		Incentives	Which RES	Revenues
1	<b>Market (Italian Power Exchange or bilateral agreements)</b>	Each	Dispatching with Terna (TSO) + Transmission with Terna + selling	Green certificate on production Feed in tariff on production	Each, except solar Solar	Selling + incentive
2	<b>Dedicated withdrawals, as defined by Authority</b>	< 10 MVA or RES non programmable (each size)	Contract with GSE including also transmission and dispatching	Green certificate on production Feed in tariff on production	Each, except solar Solar	Selling + incentive
3	<b>Dedicated withdrawals at a fixed prices including incentive</b>	Wind < 200 kW; other RES, except solar, up to 1 MW	Contract with GSE including also transmission and dispatching	Feed in tariff on immission	Each, except solar	Selling (price already includes incentive)
4	<b>On-the-spot trading</b>	Up to 20 kW; between 20 kW and 200 kW in the case of first parallel after 31 December 2007	Contract with GSE. It doesn't substitute the purchasing of electricity	Green certificate on production Feed in tariff on production	Each, except solar Solar	Compensation between immissions and withdrawals + incentive



***Thanks for your attention***

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