THE ITALIAN ENERGY SERVICES MANAGER IN THE FIGHT AGAINST CLIMATE CHANGE

Francesco Vetrò[*]

We are not God.
The earth precedes us and has been given to us
(Pope Francis , *Laudato Si'*, 67)

Abstract

The energy and environmental policies are closely tied together: the political-administrative decisions and the legal measures adopted in the field of energy affect the environmental one as well as the environmental decisions must take into account the effects that the energy sector has on the ecosystem protection. The European Union has a crucial role in the global fight against the climate changes. The target is to achieve a «climate neutrality» by 2050. As stated, given the close interrelationship between the energy policy and the environmental one, the European approach to the fight against the climate changes, could not but be an integrated type. The exceptional events occured in the energy system often arise from natural disasters and extreme weather events connected with climate changes. Those inappropriate behaviours in the energy consumption can even lead to the risk of exceptional events; therefore the so-called «risk management» in energy and environmental sectors increased its relevance. The inadequacy of ordinary tools warrant the adoption of *extra ordinem* ones. However the use of extra *ordinem measures*, which (maybe) shows a scant attention from the public powers to the prevention phase of extraordinary events, leads to the adoption of rules aimed at solving the events that could have been prevented with a proper involvement of public and private stakeholders, with technical and scientific competences. However, the so-called «risk management» is not sufficient to give a contribution to the fight against climate changes: we need political and administrative

[*] Full Professor of Administrative Law, University of Parma

decisions and legal measures referred to a "previous" timeline horizon, aimed at driving the operation of the energy system towards the «climate neutrality», and at giving a contribution for the reduction, at the roots, of exceptional events. The European legal system, as implemented by the Member States, predicts many «therapeutic measures», among which the incentive for the production of energy from renewable sources and that for energy efficiency, etc. Very important is also the attention dedicated to the need to ensure adequate sustainable development in urban areas (objective 11 of the Urban agenda for Europe). In Italy, an important role in the adoption of measures to combat climate change is played by the GSE, a public company incharged with managing the incentive mechanisms aimed at promoting the development of energy efficiency and renewable sources. What is the level of cooperation between political and technical-administrative institutions? How can GSE contribute to the prevention of energy and environmental risk situations? What role can the technical-specialist services that the GSE has the right to play in favor of public administrations in the pursuit of the environmental and energy objectives determined by international and European law? The paper aims to examine, in particular, the role that one of the institutions of the national energy system (the GSE) can play in contributing to the fight against climate change.

TABLE OF CONTENTS

1. Foreword

"*An avant-goût du Choc climatique.*" This was how Philippe Descamps and Thierry Lebel defined the Covid-19 epidemiological crisis in a dossier published in *Le Monde diplomatique*. Scientists and scholars from all disciplines are increasingly maintaining that there may be a close correlation between the Coronavirus and climate change. The dramatic

consequences which the epidemic has produced and continues to produce on public healthcare are sadly too well known. Equally well known are the negative consequences which the lockdown measures adopted by virtually all the countries around the globe will produce on economic systems — even more than they have already. The Bank of Italy has noted a fall of 4.7% in Italian GDP in the first quarter, with a projected further decline of 9% by the end of the year, and a minus sign in front of household consumption (-8.8%), investment (-12.4%), exports (-15.4%), imports (-17.3%) and employment (-9.8%).

Among other things, the Covid-19 has taught us how necessary it is — should the presuppositions recur — to focus on prevention, sooner than the tackling of exceptional events. And, in fact, all the preconditions to focus efforts on preventing exceptional events related to climate change already exist, since the forecasting (or if you prefer, 'precautionary') phase has now reached unambiguous conclusions

This paper therefore sets out to examine the role of one of the institutional players involved in the governance of the Italian energy system in the fight against the climate change emergency. It refers to the organizational structure in which the 'Incentive State' for renewable energy and energy efficiency is personified — according to a current but not totally correct concept: namely, the Italian energy services manager GSE. Although aware that the fight against climate change involves — and it could not be otherwise — several sectors (agriculture, trade, transport, infrastructure, finance, etc.), the perspective to begin from is that of the energy sector.

Is the fight against climate change an emergency? What is the European Union's stance on energy governance today? What are the European Union's 'means of action' when it comes to energy to tackle climate change and achieve 'climate-neutrality' by 2050? And what measures have been taken following the Covid-19 emergency? What is the GSE? What are its functions? What is the current role of the GSE in the governance of energy geared to combating climate change? What is its legal nature? What role will it be playing in the near future? These are just some of the questions that we will try to answer.

2. From 'turbo-capitalist development' to 'sustainable development'. A brief overview

Climate change is afflicting our planet. It has provoked the occurrence of exceptional events (floods, sea-level rises, etc.) which have resulted in both economic and non-economic damage. Traditional industrial production models (focused on the use of fossil energy sources) and the energy-dependent lifestyles of most of the world's populations are no longer admissible nor tolerable. Supercharged capitalism or 'turbocapitalism' has advanced the *unregulated* realization of behaviour and activities preordained to short-sighted fulfilment of the current generation's needs, with no attention to protecting the environment and no importance being given to future generations. This anthropodestructive logic — as we all know — began to be questioned in the second half of the 20th century, after the first international theorization of the concept of sustainable development by the Brundtland Commission. In its 1987 report entitled *Our Common Future*, this commission clarified the meaning of 'sustainable development': one that can meet the needs of the current generation, without compromising the ability of future generations to fulfil their needs.

No one can now seriously doubt the close interrelationship between human activity and climate change. It has been scientifically proven. Consequently, on the basis of such a premise, the international community has gradually adopted various agreements aimed at reducing greenhouse gas emissions and preventing the harmful effects of global warming: *a)* the United Nations Convention on Climate Change of 1992 (the so-called Rio Agreement), with the related 1997 Kyoto Protocol; *b)* the Global Agenda for Sustainable Development *Transforming our World: Agenda 2030 for Sustainable Development*, adopted in 2015 by 195 UN member countries; *c)* the 2015 United Nations Framework Convention on Climate Change (Paris Agreement), and so on...

3. European energy and environmental policy choices after the Paris agreement: the Clean Energy Package, the European Green Deal and the proposed European Climate Law

Energy — as a necessary resource for all areas of human action (from industry to agriculture, from commerce to

restaurants, from transport to construction, from public services to domestic activities, from sport to communications, etc.) — is the sector that will exert more influence than any other in the fight against climate change. Energy policy and environmental policy are in fact linked in two ways: while political-administrative decisions and legal measures taken in the field of energy are reflected in the environmental sector, environmental decisions cannot fail to take into account the impact that the energy sector is destined to have on environmental protection (more than any other). In view of this, in 2016, the European Commission announced that a new energy and climate package would be adopted. The long-term goal which the European legislator has set itself to achieve is a condition of 'climate-neutrality' by 2050. However, achieving 'climate-neutrality' necessarily involves meeting certain medium-term energy targets (2030): a 40% reduction in greenhouse gas emissions compared to 1990; a 32% increase in the share of renewable sources out of the total; and a 32.5% improvement in energy efficiency. This is because activities in the European energy sector account for more than 75% of all greenhouse gas emissions.

Accordingly, the European Commission, through its Communication of 30 November 2016, no. 860, *Clean energy for all Europeans*, made it clear that "implementation of the EU's ambitious climate change commitments in Paris is a priority and depends to a great extent on the success of the transition to a clean and renewable energy system." This Communication led to an ambitious package of measures known as the 'Winter Package', or 'Clean Energy Package', with which the objectives announced by the Commission acquired greater legal weight. The package consists of eight measures: EU Regulation No. 2018/1999 on governance of the Energy Union, EU Directive 2018/2002 on energy efficiency, EU Directive 2018/2001 on promotion of renewable energies (the so-called Red II), EU Directive No. 2018/844 on energy performance in buildings, EU Regulation No. 2019/943 on the internal electricity market, EU Directive No. 2019/944 on common rules for the internal electricity market, EU Regulation No. 2019/941 on risk preparedness in the electricity sector, and EU Regulation No. 2019/942 on the establishment of an EU Agency for Cooperation between Energy Regulators (ACER).

Therefore, within the Euro-unitary system and that of the individual Member States, the instrumentality relationship between energy objectives and the goal of 'climate-neutrality' is reflected in the correlation between the measures of the Clean Energy Package and those of the European Green Deal.

4. The fight against climate change: An emergency 'in name' and 'in fact'

So far, we have spoken of the close link between energy policy and environmental policy, including the goals which the most recent Euro-unitary regulatory measures have set to tackle climate change. At this point, we need to ask ourselves: Is the fight against climate change an emergency? The question may sound extremely odd, but it is more fitting than we might imagine. The scientific community has been warning (for years) that, in the absence of rapid and effective solutions to climate change, the global average temperature would be at risk of rising by 1.5 degrees centigrade, causing the permafrost to melt, with rising seas, the spread of new infectious diseases, the emergence of new diseases, and eco-systemic damage to forests and the wetlands.

Despite this, only recently has a resolution been adopted at a European level in which a climate and environmental emergency was formally declared. Indeed, in its resolution of 28 November 2019, 2019/2930(RSP), the European Parliament, having declared a "climate and environmental emergency", stated "its commitment to take urgent action to combat and mitigate this threat before it is too late." Calling on the European Commission to "carry out a comprehensive assessment of the climate and environmental impact of all legislative and budgetary proposals and to ensure that these proposals are fully in line with the goal of limiting global warming to 1.5°C." The Italian Parliament also made a move in accordance with the European Parliament's choice with its motion number 1-00181, adopted in December 2019. In fact, with this act, the Parliament intended to commit the Italian Government to adopting initiatives, including regulations, geared to an effective impact on the fight against climate change.

4.1. (Cont'd) The physiognomic traits of the 'emergency regulation': activities, acts and organization of the emergency

The fight against climate change is an emergency in which scientific uncertainties cannot be admitted, with the result that the need for public decision-makers to inform their decisions in compliance with the 'precautionary principle' has long been exceeded: the precautionary and prudential attitude which the authorities are called upon to adopt is in fact an implementation of the prevention principle which, unlike the precautionary approach, entails the adoption of measures to avoid the occurrence of an event in relation to which there is no state of scientific uncertainty, insufficiency, or inconclusiveness. Hence the inevitable shift from the paradigm of 'risk administration' to the paradigm of 'emergency administration'.

An emergency — meaning a legally recognized emergency — posits that the ordinary powers which public decision-makers hold are neither suitable nor sufficient for concrete care of the general interest. In view of the unsuitability of 'ordinary instruments' to deal with emergencies, in these cases, the legal system allows the use of organization modules and extraordinary instruments of action. The answer given by public law to emergency situations is the 'Emergency Regulation': a set of measures and interventions (both legislative and administrative) which, adopted by a multi-form network organization, may derogate from the legal order in the name of those public interests which are (or could be) compromised due to extraordinary events of a natural origin or arising from human activities. With this definition, it is useful to dwell on three profiles: *a)* the *activity* through which emergency interventions and measures are implemented; *b)* the *acts* in which the emergency activity is expressed; *c)* the *organization* of the persons involved in the emergency regulation.

With regard to the *activity*, this is divided into three phases: forecasting, prevention, and handling of exceptional events. *Forecasting* translates into efforts by the competent authorities to determine — on the basis of scientific, technical, technological and administrative evidence — the likelihood of a risk situation arising which, in connection with exceptional events of natural or human origin, could cause damage to life, physical integrity, property,

settlements, animals, and the environment. *Prevention* consists in implementing all those measures (legislative and/or administrative) geared to avoiding, or reducing, the probability that the risk situations identified in the forecasting phase will actually occur. Finally, *handling* includes all the activities involving the adoption of measures aimed, firstly, at reducing the detrimental impact of the exceptional event on life, physical integrity, property, settlements, animals and the environment and, secondly, to encourage restoration of normal living conditions.

As far as the *acts* are concerned, an immediate distinction must be made. Those adopted during the phases of forecasting and prevention of an emerging situation are decisions taken with full respect for the ordinary parameters of legitimacy established by the legal order. In contrast, acts adopted in the handling phase are considered *extraordinary*, given that they may derogate from the legislation in force.

Finally, as regards the *organization* of the persons called to cooperate in order to tackle (anticipate, prevent and deal with) emergencies, this has certain specific characteristics. Firstly, it is 'multifaceted and complex', given that the entities (public and private) called to intervene in the various phases of the emergency activity are many (possibly too many). Secondly, it is 'twofold': in the planning and prevention phases it is a network, since it consists of a multitude of entities (public and private) which cooperate, with relations of coordination, to achieve a common goal; in the handling phase, on the other hand, it becomes a pyramid, since certain entities, by assuming a position of hierarchical superordination towards the others, have powers of order and command. Thirdly, it is a 'markedly political organization', since those with technical and scientific expertise play the role of a 'servant' towards the political players who are responsible for fixing the content, the timeframes, and the way in which the emergency is to be tackled.

5. The prevention of exceptional events related to climate change in the multi-level governance of the Energy Union, as amended by Regulation No. 2018/1999/EU: Integrated National Energy and Climate Plans (INECP) and long-term strategies

Once the characteristics of the emergency regulation have been outlined, it is possible to focus on the multi-level governance of the energy sector in relation to the climate crisis. One clarification is essential: when it comes to combating the climate crisis, the Energy Union's governance comes to the fore in the prevention phase, since it is here that the energy sector boasts special features in relation to other sectors (trade, agriculture, transport, etc.). Indeed, for the energy sector, there is no *ad hoc* discipline involving a forecasting phase nor a phase to handle exceptional events related to climate change. To date, the forecasting phase of the climate emergency regulation has seen its most authoritative outcome in the 2018 report of the *Intergovernmental Panel on Climate Change* (the United Nations body responsible for scientific research on climate change), in which it has been predicted that, in order to avert environmental disasters, it will be necessary within eleven years to limit global warming to 1.5°C and not to 2°C. This is — on closer inspection — a rate that is valid for all sectors, including energy. The phase to handle any calamitous events that may occur as a result of climate change is, instead, part of the governance of the EU Civil Protection Mechanism, established to ensure a practical, timely contribution to the handling of current or imminent disasters. It goes without saying that, like the forecasting phase, the handing phase of the emergency regulation to combat climate change is also the subject of a cross-sectoral discipline, which includes that of energy.

The energy sector involves multi-level governance. The need felt to combat change, at one with the awareness that the 2050 goal of 'climate-neutrality' necessarily begins from a decarbonized energy sector, has led the European legislator to redesign the governance of the energy sector. With Regulation No. 2018/1999/EU a mechanism to coordinate the energy and environmental policies of individual Member States had already been introduced. This regulation "lays down the necessary legislative basis for inclusive, cost-effective, transparent and

predictable governance that can ensure the achievement of the long-term objectives and targets of the Energy Union up to 2030, in line with the 2015 Paris Agreement on Climate Change".

The main feature of the Energy Union's new governance is the crucial importance it gives to cooperation. Both regional cooperation is envisaged, to the extent that each Member State should have the opportunity to comment on national plans before their final definition, in order to avoid inconsistencies and possible adverse effects on other Member States and to ensure collective achievement of the common goals, as well as cooperation between the Member States and the Union.

The main instrument for the implementation of regional and European cooperation has been identified in the Integrated National Energy and Climate Plans (INECP). These documents cover reconnaissance, planning and programming issues — taking as a timeframe a period of ten years (2021-2030) — and they are supposed to provide an overview of the current conditions of the energy system of each Member State (the so-called *reconnaissance part,* establish national objectives for each of the five dimensions of the Energy Union (so-called *planning part*) and to enact measures to enable these objectives to be achieved (so-called *programming part*).

In addition to the INECPs, the multi-level governance of the Energy Union also focuses on an expected 'long-term strategy': each Member State (by 1 January 2020 and then by 1 January 2029 and every 10 years thereafter) must draw up and announce its energy strategy to the Commission with a perspective of at least 30 years. Accordingly, this long-term strategy should be the link between intermediate energy targets (40% reduction in greenhouse gas emissions compared to 1990, a 32% increase in the amount of renewable sources, and a 32.5% improvement in energy efficiency) as the ultimate goal of 'climate-neutrality' by 2050.

6. The Energy Services Manager (GSE) in Italian energy governance geared to Europe

Italy has been one of the most successful European countries in implementing measures aimed at achieving the energy-environmental goals set for 2020. Suffice it to note that for the sixth consecutive year, the threshold of 17% of energy

consumption met by renewable energy sources was again exceeded in 2019. Much of the merit must go to the action of the Energy Services Manager (GSE), which has, among other things, "helped to activate some 2.6 billion Euro of new investments, while avoiding the emission of 43 million tons of CO_2 into the atmosphere."

The GSE is a state-owned company "which promotes sustainable development through the technical-engineering certification and verification of renewable and high-efficiency cogeneration plants; it also creates incentives for electricity produced and supplied to the grid by these plants and any measures aimed at increasing energy efficiency. In addition, it is responsible for measures to promote greater competitiveness in the natural gas market, and disseminates an energy culture compatible with the needs of the environment. It manages the national system of certificates for the release of biofuels for consumption in order to develop a sustainable biofuel chain and reduce CO_2 emissions into the atmosphere." It was established under Italian Legislative Decree no. 79 of 16 March 1999 (the so-called 'Bersani Decree'), which included the creation by Enel S.p.A. of a company to manage the national grid as well as transmitting and dispatching electricity; in its original form, the company went under the name of GRTN (National Transmission Network Manager). As a result of a reunification of ownership and management of the national transmission network, the name was changed to GSE (Energy Services Manager). The functions initially assigned to the GSE involved: *a)* the purchase and sale of CIP6 electricity; *b)* the issuing of green and white certificates; *c)* activities to implement European directives on the promotion of electricity from renewable sources; *d)* management of the company's holdings in the other companies *Gestore dei Mercati Energetici, Acquirente Unico, and Ricerca sul Sistema Energetico*. Subsequently, additional and increasingly important functions were assigned to GSE in order to promote electricity production from solar energy, develop high-efficiency cogeneration plants, and so forth.

7. The GSE's "preventive functions" in the fight against climate change: incentives and technical-administrative regulation of renewable energy and energy efficiency

The GSE's functions have changed with the arrival of indispensable new priorities in the supranational and national energy sectors. Wishing to transpose these functions into the phasic sequence of public emergency activities, it is now called upon to perform functions that find a place within the *prevention phase* in the fight against climate change. These prevention functions can be sorted into eight categories: public incentives, technical-administrative regulation, modification, public certification, technical-specialist assistance, promoting dissemination of eco-sustainable culture, energy monitoring, technical, economic and social monitoring and analysis of the effectiveness of the measures included in the Italian INECP.

As regards public incentives, it is a known fact that the costs to realize plants which use renewable energy sources, or to carry out energy efficiency interventions along with the relevant bureaucratic costs (of a different order and type), are among the main factors which led the European legislator to believe that, without incentive mechanisms, the cooperation of the business world and civil society in the fight against climate change would never be obtained. Hence the choice to provide a comprehensive series of incentive mechanisms, the management of which, in Italy, is entrusted to the GSE. There are many incentive mechanisms managed by the GSE.

A precise, detailed description here of the rules which dominate their functioning would become a pointless anthology. For this reason, we shall limit ourselves to pointing out that two types of mechanisms can be distinguished: one for incentives in the strict sense, the other for incentives in a broader sense. The incentive mechanisms in the strict sense include 'CIP6'[1], 'Green Certificates'[2], 'White Certificates', otherwise known as 'Energy

[1] This is an incentive mechanism introduced by a decision of the Inter-Ministerial Price Committee on 29 April 1992, which envisages incentive prices for electricity produced from plants powered by renewables and similar sources.

[2] Negotiable securities which the GSE issues in proportion to the energy produced by a qualified RES plant (one powered by renewable energy sources). This incentive focuses on the obligation of producers and importers of fossil

Saving Certificates'[3], the 'All-inclusive Tariff'[4], the 'Thermal Account'[5] and the 'Energy Account'[6], meanwhile, in the broader sense, incentive arrangements include 'Dedicated Collection'[7] and 'On-The-Spot Exchange'[8].

---

electricity to introduce annually into the national grid a minimum proportion of electricity produced by facilities powered by renewables. Possession of Green Certificates therefore demonstrates fulfilment of this obligation: each Green Certificate certifies the production of 1MWh of renewable energy. Since 2016, the Green Certificate mechanism has been replaced by a new form of incentive: the Incentive Tariff, which consists of economic assistance granted in proportion to the amount of energy produced by an RES plant.

[3] Negotiable securities issued by the GSE to certify the achievement of energy savings through interventions and projects that increase energy efficiency in the industrial sector, network infrastructures, services, transport, but also in the civil sector

[4] An incentive mechanism to support the granting of economic contributions from the GSE, as alternatives to Green Certificates, reserved for qualified RES plants of a small size: i.e., plants with an average annual nominal power of not more than 1MWh, or 0.2MWh for wind farms. It is known as 'all-inclusive' in that its value includes an incentive component and a component to valorize the electricity supplied to the grid.

[5] An incentive mechanism consisting in the granting of economic contributions in order to encourage implementation of small-scale measures to increase energy efficiency and produce thermal energy from renewable sources, including the efficient cladding of existing buildings (insulation of walls and coverings, replacement of doors and windows and installation of brises-soleil), replacement of existing systems for winter air conditioning with higher efficiency systems (condensation boilers), installation of boilers, biomass stoves and fireplaces, and solar thermal plants also combined with solar cooling technology, and so on...

[6] A mechanism to grant economic contributions to photovoltaic and thermodynamic solar plants. Mention must also be made of the CIP6 incentive mechanism set up by a decision of the Inter-Ministerial Price Committee on 29 April 1992. By means of this mechanism – in some ways rudimentary – producers of renewable energy sources were granted the right to sell any green energy produced to the GSE, which had to pay them more than the market price.

[7] Through 'Dedicated Collection', the GSE withdraws electricity produced by RES plants, paying the producer a price for each kWh with a guaranteed minimum. That is to say, a sum whose minimum amount is determined by the regulator (ARERA), so as to avoid any fluctuations in the price of energy that might occur in the free market (hourly zonal price). The energy withdrawn by the GSE is then resold by the GSE on the market, ultimately playing the role of an intermediary between the producer and the electricity market.

[8] This is a mechanism which allows those who produce and supply energy from renewable sources to the grid to obtain compensation between the economic

This incentive mechanism is accompanied by an important technical-administrative regulation function. The requirements and arrangements to access incentive mechanisms are laid down — in general terms — by the law and by inter-ministerial decrees. Unfortunately, the excessive generality of the prescriptive and regulatory requirements can sometimes lead to uncertainty and confusion among operators. Which is why, in exercising its administrative functions, the GSE adopts 'implementing procedures': 'general administrative acts' in which the requirements, procedures, and obligations for proper and legitimate admission to incentives are described in a transparent, detailed language.

7.1. (Cont'd) Energy qualifications, audits, forecasts and monitoring

The GSE's 'preventive functions' in the fight against climate change — as mentioned already — do not merely involve incentives. It also performs functions of qualification and verification. *Qualification* means the adoption — after carrying out a technical-engineering and legal-administrative inquiry — of an 'enabling measure', in which renewable energy producers are acknowledged as carrying out actions and activities which would otherwise be precluded from them, and a 'certification act', in which the quantity of renewable energy produced by each economic operator is attested: the enabling measure consists in IAFR qualification (for plants using renewable energy sources) which constitutes the 'prerequisite' on which access to incentive mechanisms is conditional; instead, the certification act is that of IGO qualification (meaning Guarantee of Origin).

In order to ensure that incentives are granted to operators who actually carry out activities aimed at the production of renewable energy or the achievement of energy savings, the GSE has yet another important function: *control and verification*. This is a function which is currently governed by Italian Legislative Decree no. 28 of 3 march 2011 and a Ministerial Decree of 31 January 2014, in which the GSE carries out, both through documentary

value of the energy produced and fed into the grid and the economic value of the energy taken and consumed by them over a period which is, however, different from that of the production.

investigations and on-the-spot inspections, audits to ensure that operators admitted to the incentive mechanisms satisfy the requirements required by law for the duration of the incentive period, in order to avoid the inappropriate granting of public funds. No less important, moreover, are the functions of predicting the quantity of electric energy introduced into the grid and of determining the quantity of electricity that should have been produced by wind farms (aka Shortage of Wind Power).

7.2. (Cont'd) Certificates of Entry for Consumption (CEC) to promote the use of biomethane and other advanced biofuels in the transport sector

Transport is one of the sectors in which fossil fuels are still used in a major way. For this reason, the GSE is responsible for managing a special incentive mechanism for the use of biomethane and other advanced biofuels. This mechanism presupposes the existence of two players: petrol and diesel suppliers, and producers of advanced biomethane and biofuels for transport. The former are legally obliged to introduce (annually) a minimum proportion of biomethane or biofuel, calculated on the basis of the quantity of fossil fuel released for consumption that same year; failure to fulfil these obligations leads to financial administrative sanctions being imposed by the Technical Advisory Committee on Biofuels. The latter, in providing biomethane or advanced biofuels for consumption by means of roadside, motorway, or private gas stations, are entitled to be issued Certificates of Entry for Consumption (CEC) by the GSE: negotiable securities, worth Euro 375 per CEC, showing the quantity of biomethane or advanced biofuels released for consumption in the transport sector.

7.3 (continued) Promotion of an eco-friendly culture and technical and specialist services for public administrations

Given that the fight against climate change is an intergenerational challenge, the GSE also carries out activities to raise awareness of energy and environmental issues among school students of all ages. Similarly, activities to organize meetings, conferences and institutional round tables are not neglected either,

with the aim of stimulating exchanges between sector operators, trade associations, and other stakeholders.

But there is yet another important activity which the GSE carries out in the fight against climate change: technical and specialist assistance for public administrations. Public administrations (whether central, regional or local) have a key role to play in the fight against climate change. The considerable size of their 'real estate pool', the public services provided to the community (transport, public lighting, etc.) and the capital goods (electricity, gas, stationery, etc.) they need for their institutional tasks, are only a few of the items by which public administrations can contribute to the transition to a 'climate-neutrality' system. It was in view of this that the Italian legislature, with Law no. 99 of 23 July 2009 (the so-called 'Development Law'), assigned to the GSE a series of tasks which make it one of the most authoritative (perhaps *the* most authoritative) 'consultant' for public administrations in the fields of energy and the environment.

7.4. (Cont'd) Monitoring of INECP implementation, analyses and projections on the impact of energy and environmental measures

Italy's Integrated National Plan for Energy and Climate (INECP) has assigned to GSE — and it could not be otherwise — other important functions which again belong to the prevention phase in the fight against climate change. In leveraging the GSE offices' advanced technical capabilities of analysis, estimation and projection, the Italian Government has seen it as the appropriate institutional entity to monitor the concrete implementation of INECP measures, including their effectiveness in achieving the objectives set at a supranational level. Nonetheless, the INECP has also entrusted the GSE with the task of developing and identifying – in conjunction with other entities – the measures required to ensure the effectiveness of the INECP itself.

But not only. The GSE is also part of the INECP Observatory, as a technical department (also composed of the Regions, ANCI and ISPRA) whose function is to ensure advanced technical comparisons with regard to the possible implementation of the plan while monitoring implementation of the INECP measures. It is also up to the GSE to establish a monitoring platform (in which data from different sources can be merged)

that can provide information to citizens and public administrations on the effectiveness of energy-environmental policies, the level of achievement of the various targets, and the economic aspects connected with these policies, in terms of investment and impacts on employment.

8. Public intervention in the economy to accelerate the climate transition process: Big Government following the Covid-19 epidemiological crisis

Our examination of GSE's role in combating climate change could end here. But it would be incomplete, short-sighted. It would not take into account the GSE's position in a context — like the current one — in which the Covid-19 epidemiological crisis is forcing us to hastily rethink even our economic models. This need has sparked many political and institutional discussions about the amount of public resources to be used to revive European economies and about the choice of sources to cover these expenses. But two things immediately found cross-party consensus.

The first is that measures to remedy the harmful consequences of the health emergency must be geared to economic development based on respect for environmental sustainability. The second is the need for national and European public interventions of exceptional dimensions, giving rise to "a renewed role of the State in strategic sectors and in the essential common goods: The defence of the territory, this is an area where it would be essential to define the national plan for adaptation to climate change, including preparation for situations like that provoked by the pandemic, public healthcare, research and education, acceleration of energy transition and a new decarbonized, smart, and sustainable transport system."

There is no doubt that the measures the Member States and the European Union have adopted or are about to adopt — within the temporary framework of State aid to support the economy in the current Covid-19 emergency — belong precisely within this two-pronged approach. With specific reference to the European measures, in addition to the credit lines of the European Stability Mechanism (ESM) which Member States can activate under the Pandemic Support Crisis, there is the Recovery Fund, an

ambitious financing programme (renamed 'Next Generation EU') worth Euro 750 billion, plus an increase of Euro 1,100 billion within the EU Multiannual Financial Framework (MFF) for the period 2021-2027.

The widespread conviction that, at this historic moment, economic and social recovery requires the overcoming of the neoliberal paradigm 'less State more market' instead of the paradigm 'more State for the market' is therefore incontrovertible, and ends up by calling into question what has already been labelled *Big Government*: State donations, defence of state-owned assets, and a revival of public authorities.

9. The inclusive institution of the Innovator State in the transition process towards a climate-neutral system

Economic studies have long agreed that excessive market power exacerbates rising inequality, financial instability, and environmental degradation. For this reason, they identify a fresh State intervention in the economy as the only way to remedy such a situation. The Covid-19 epidemiological crisis has only further bolstered these theories: the State must intervene in the economy not to replace the market, but to cooperate with it in order to steer its functioning towards ethical and environmental values, fostering innovation and, as a result, equitable economic prosperity.

It has been noted that a country's prosperity or hardship depends neither on 'geographical factors' nor 'cultural factors', nor 'the ignorance of its rulers'. Both of these depend — according to one of the most reliable economic theories — on the type of institutions (political and economic) which supervise the functioning of society and the market. It is 'inclusive instructions' which determine the economic progress of a country. In contrast, 'extractive institutions' decree its failure.

Economic studies go even further. Indeed, it is argued that in order to initiate economic development capable of facilitating the transition to a climate-neutral system, an inclusive institution is needed that takes on the connotations proper to an 'Innovator State': it is the State which must provide measures to support technological innovations with the least environmental impact.

As we know, the energy-environmental transition process requires investment in activities with uncertain (economic) outcomes. The private entrepreneur is therefore forced to refrain from making such investments. Unless there is a variable: State intervention aimed at steering private economic initiative toward activities which can contribute to the transition to a zero-greenhouse-gas-emission system. The economic theory of the Innovator State is highly convincing. The centrality of a State intervention in the economy is fully shared, naturally, without this meaning "a denial of the existence of the private sector, from new young companies which give the dynamic impetus that leads to the emergence of new sectors (for example Google), to the important source of financing, venture capital." And even more convincing are the solutions that this theory proposes to complete what is emphatically called the 'green industrial revolution', which "needs a non-polluting energy transition, freeing us from dependence on finite energy sources (such as fossil fuels or nuclear energy) and favouring infinite, renewable energies." The role of the State is therefore necessary and indispensable, given that advanced clean technologies face many obstacles and uncertainties of success, to the point that private lenders (commercial banks, investment funds, financial intermediaries, etc.) are reluctant to support a company which wants to join the green energy sector.

Consequently, if private investors constitute *'impatient capital''* (they invest only in sectors or firms capable of ensuring short-term economic return), the State must necessarily employ '*patient capital*'': that is to say, it must support companies which intend to operate in the field of renewable energy until technological development allows them to achieve a state of self-sufficiency. It is precisely in an indication of the forms which the State's patient capital should assume that the economic theory under consideration becomes — at least in our view — enlightening. Taking into account the experiences of various countries (the United States, China, Germany, Brazil), two types of State intervention are indicated which are capable of favouring the green industrial revolution: public financing and loans from what are called 'state development banks'.

10. The Innovator State as a Public Enterprise in combating climate change

The Innovator State can identify itself — also, but not only — with 'public enterprises', which are destined to acquire fresh impetus in the near future. After the extraordinary attention seen in the early '90s, when the privatization of many public economic bodies began, the political and legal debate around them was suppressed except for limited questions to identify their applicability to the framework laid down for the 'special sectors' of public contracts. This state of affairs is bound to change. There is no doubt that public enterprises will be one of the main tools through which the State will be called upon to promote economic development in line with the fight against climate change. But just what are 'public enterprises'? The question is easy to ask but difficult to answer. Albeit with some margins of imprecision due to the need to be brief, they are those enterprises which (while pursuing social aims) are asked to exercise professionally, under the dominant influence of 'public apparati', a substantial activity in the production or exchange of goods and services on a market open to the free play of competition, while being willing to bear business risk. Moreover, on several occasions, the case-law has been able to state that the difference between a public enterprise and other kinds of public body (particularly ones governed by public law), which do not exercise economic activities, "does not lie in the organizational model adopted, but in the fact that the public enterprise is exposed to competition, operates non-essential services, and suffers or is liable to suffer commercial losses."

11. The legal nature and prospects of an 'entrepreneurializing reform' of the GSE in relation to the fight against climate change: a sustainable development bank?

Having broken down the unchanging characteristics of a public enterprise, it should be pointed out that the centrality which public enterprises are bound to assume is also confirmed by the proposal contained in a recent report prepared by the Inequality Diversity Forum, whose name is self-explanatory: "Strategic Missions for Italian Public Enterprises. An opportunity to guide the country's development". This report comes to

conclusions which can be shared: the State, through its public enterprises, must steer the economic system toward values that do not always expect an immediate economic return. However, the considerations of the report are based on a technically incorrect premise, at least as far as the GSE is concerned. Namely? Including it among the public enterprises of the Italian State.

Of course, this is not a mistake on the part of the authoritative authors of the report, but a conscious decision to delimit their field of investigation. It is no coincidence that, in the text of the document, the question "but what is meant here by 'public enterprises'?" has been asked, and that "the definition adopted in this report may, like any other, raise analytical objections, but is essential to demarcate the scope of interest". It is also stated that "a public enterprise is a productive organization in which the State has a controlling stake, that is, one which affects the company's governance, through the appointment of directors and any other proprietary prerogatives". This is clearly a description in broad brushstrokes, which is in danger of conflicting with the rather more circumscribed definition of an eminently legal nature. This investigation is not challenging a moot point. Quite the opposite. Indeed, the Inequality Diversity Forum report encourages reflection on what can be done to turn the GSE, conceivably, into a 'public enterprise' in the technical sense of the word, letting it — even more so than now — take a decisive role in implementing the Italian State's strategic missions; especially those related to sustainable development.

Therefore, we must first understand what the GSE is today from a legal point of view. It can be said — in a leisurely way — that it is a 'state-owned company', but not at the same time a public enterprise. These conclusions come from both a *positive test* (establishing the existence of the indicators of a public body) and a *negative test* (establishing the absence of the indicators of a public enterprise). Starting from the positive test, it must be said that the current organigram of the GSE is that of a public limited company in the energy sector. It may be regarded as a 'quasi-administrative company', a 'legal company' or a 'public body in a corporate form' within the 'functional and changing concept of public administration', for which the corporate form is an irrelevant element. This notion — the fruit of the pervasive influence of the Euro-unitary order — raises the problem of identifying a 'public

body'. Having passed the use of legislative techniques to strictly classify public bodies, identification of the public or private nature of a given entity requires assessment of the occurrence of the so-called 'symptomatic indicators' of advertising. In spite of several, albeit appreciable, attempts by the legislature to provide a clear definition of which subjects can be placed within the 'public perimeter', identification of these must be carried out through the use of 'dynamic' and 'functional' criteria and not criteria which are already 'static' and 'formal'. As for the GSE, all the symptomatic indicators of the public body exist: it was established by law; it is in a relationship of instrumentality with the State; it has been assigned the exercise of powers of direction and control of the State; it pursues goals of public interest; it has been attributed public powers; finally, it carries out its functions using public resources obtained by a billed payment of the ASOS component.

If the positive test confirms the nature of the GSE as a public company, the negative test will also lead to similar conclusions. Indeed, the GSE cannot be regarded as a public enterprise, given the lack of necessary requisites. Firstly, it does not produce, by law and by statute, goods or services according to (so-called economic) criteria and logic aimed at allowing earning of revenues to an extent that ensures a recouping of the costs incurred or even a profit (not even tendentially). Secondly, it does not bear any business risk, since the administrative activity of the GSE protects it from the risk of suffering commercial losses; the resources it needs are those (for the most part public) whose entry is guaranteed by a prescriptive and regulatory framework which obliges electricity users and, through incentives, the operators, to provide the GSE with the resources necessary for its operation. Thirdly, there is no competitive market for incentives to employ renewable energies (not even in power), since not even in an ideal world would it be possible to find a sufficient number of (economic) operators willing to provide resources without any expectation of a return, but solely in the general interest.

Thus, the proposal of the Inequality Diversity Forum report and the ideas offered by the economic theory of the 'Innovator State' suggest — as has already been said — making a case to reform the current organigram of the GSE. This is clearly in order to transform the 'gentle nudges' of public incentives into 'forceful

shoves' towards a zero-emission system. In this context, it would not be — in our view — impossible to exclude a possible entrepreneurializing of the GSE, which could be achieved through a transformation of the GSE into a 'public enterprise', especially a 'development bank'.

But how could such a transformation be implemented in practice? Should it be a process of integral transformation, or would a partial, targeted process be better? The second option is to be preferred. Leaving aside certain issues for the sake of simplicity, the process of privatizing (or, better, entrepreneurializing) the GSE could occur according to a two-pronged scheme: a 'fixed part' (the activities which it should continue to carry out as a public body) and a part subject to conversion (activities which could be carried out as a 'public development bank').

Let us try to explain further. The fight against climate change still needs to be paid for by private interventions capable of reducing greenhouse gas emissions. The risks to be borne by the private operator are still too high; costs that would be impossible to bear if there were no public incentives which, *unlike loans*, do not impose on the operator any obligation other than to make certain green investments; no obligation to repay the sums lent, except where they were obtained illegally, and no obligation in terms of results in the field of technological innovation. Not only that: knowledge of the actions and initiatives that can be implemented to help fight climate change is still poor; in particular, the referent is the world of public administrations: quite often, public resources to encourage energy upgrading of public buildings are ignored, for example. The dissemination and consolidation (especially among the new generations) of the culture of sustainability is decidedly satisfactory, albeit far from sufficient.

The elements referred to above suggest identifying a series of activities which the GSE could continue to carry out as a public company: for example, encouragement of (small-scale) initiatives or (small-scale) interventions linked to a low level of technological innovation, specialist technical advice for public administrations and, of course, promotion of the culture of environmental sustainability in academic, institutional, and civil society.

However, alongside the activities that the GSE could continue to carry out as a public company, there are many others which instead, would be better carried out as a 'public development bank'. We are aware that it is unlikely that everyone will agree. However, we do believe that continuing to provide incentives (we can say non-refundable) to any economic operator is (arguably) poorly productive in terms of driving technological innovation and creating a competitive, self-sufficient, renewable energy market. Even the private operator who has (or might have) the appropriate organizational, economic and technical means is not in any way induced to invest in AC. The logic of profit maximization (typical of every private entrepreneur) leads, rather, to exploit the technology already available, without identifying new and more efficient kinds. Unlike public (non-refundable) incentives, the awareness of having to honour the commitments made with a loan is a stimulus to innovation: if innovation is achieved in terms of a process or product, the commitment can be honoured sooner and better.

The economic theory of the 'Innovator State' — as we have seen — teaches that the green industrial revolution has no need of 'impatient capital' (private capital), but 'patient capital' (public capital). But 'patient capital' (that of development bank loans) is one thing; quite another is 'dormant, disinterested' capital for technological innovation in renewable energy (that of public-sector, non-refundable donations). It follows that the GSE could become — in our view — the body responsible for financing energy projects and initiatives with a high potential for technological innovation, as a 'public development bank'.

This reform could create several advantages: a reduction in the weight of incentives for renewables and energy efficiency on electricity bills, since the relative burden on the final energy customers would be reduced directly in proportion to the increase in supply available from the GSE on the market; the responsibility of economic operators to make investments in renewable energy and energy efficiency on the basis of increasingly analytical and timely industrial plans; an increase in technical and technological innovation and research, since a loan system, with a related obligation of repayment, would encourage operators to develop technologies capable of making economic initiatives in the energy and environmental sectors that were financially and economically

self-sustainable. Not to mention the fact that the 'patient claim' which the 'GSE-Development Bank' would have, in terms of an economic return on the initiatives financed could be the 'breath of life' of a wide-ranging cooperation network: in order to encourage the technological development of the funded project or initiative, the creation of a network between the funded enterprise, the GSE-Development Bank, the academic world, RSE S.p.A., other (public and private) research bodies, etc. would be easier. In the final analysis, a reform which could speed up the transition to a climate-neutral system, with companies engaged (through the support of long-term loans) in the implementation of initiatives characterized by a high level of technological innovation in the field of renewable energy and energy efficiency; initiatives that must lead to the creation of a competitive market for green energy, to completely supplant the fossil energy market.

12. Conclusions

As we have tried to demonstrate, the fight against climate change requires an effort that is as widely shared as possible. The public and private sectors must act in synergy with each other. There is no longer any time to waste. The Covid-19 epidemiological emergency is the living proof of this. At present, among the public players, a crucial role in the fight against climate change can only be played by the GSE; and the effectiveness of its action is beyond question.

This comforting fact does not, however, allow us to exclude the beginning of a reasoning on possible new models of action, perhaps aimed at enhancing its 'entrepreneurial vocation' along the lines of solutions which, having already been used in other countries, can combine technological innovation and the fight against climate change; both are indissoluble components, although public support for technological innovation applied to renewable energies in Italy is still too poorly structured, and lacks an overall vision. We therefore trust that Italy's €209 billion from the Recovery Fund can also be used to develop different public intervention models in the field of renewable energy and, more generally, in environmental sustainability; models that exceed, for certain initiatives, the logic of 'dormant capital' (grants, incentives and grant aids) to access that of 'patient capital' (long-term loans).

REFERENCES

D. Acemoglu, J.A. Robinson, *Why Nations fail: The Origins of Power, Prosperity and Poverty* (2012).
V. Angiolini, *Necessità ed emergenza nel diritto pubblico* (1986).
L. Aristei, *L'Accordo di Parigini: obiettivi e disciplina*, 3 Riv. quadr. dir. amb. 78-79 (2017).
A. Barone, *Il diritto del rischio*, Milan (2006).
M. Carabba, *Incentivi finanziari*, Enc. dir. 963 (1970).
S. Cassese, A. Massera, *Le imprese pubbliche in Italia*, in Vv. Aa. (eds.), *L'impresa pubblica* (1977).
G. Castaldi, *Sovvenzioni, incentivi e finanziamenti pubblici*, XV *Dig. disc. priv.* (1998).
V. Cerulli Irelli, *Ente pubblico: problemi di identificazione e disciplina applicabile*, in V. Cerulli Irelli, G. Morbidelli (eds.), *Ente pubblico ed enti pubblici* (1994).
V. Cerulli Irelli, *Impresa pubblica*, in C. Pinelli, T. Treu (eds.), *La Costituzione economica: Italia, Europa* (2010).
R. Cippitani, *La sovvenzione come rapporto giuridico* (2013).
M. Clarich, *Società di mercato e quasi-amministrazioni*, 1 Dir. amm. 253 (2009).
A. Colavecchio, *Energia elettrica*, Dig. disc. pubbl. 233 (2005).
F. De Leonardis, *Il principio di precauzione nell'amministrazione di rischio* (2005).
M.G. Della Scala, *Società per azioni e Stato imprenditore* (2012).
F. Di Porto, *Riunificazione e privatizzazione della rete di trasmissione dell'energia elettrica: il Caso Terna – GRTN*, in L. Ammanati (ed.), *Monopolio e regolazione pro-concorrenziale nella disciplina dell'energia* (2005).
A. Fioritto, *L'amministrazione dell'emergenza tra autorità e garanzie* (2008)
A. Fioritto, *La funzione di certezza pubblica* (2003).
F. Fracchia, M. Occhiena (eds.), Climate change: *la risposta del diritto* (2010).
F. Fracchia, *Sviluppo sostenibile e diritti delle generazioni future*, 1 Riv. quadr. dir. amb. 41 (2010).
S. Giacchetti, *Certificazione (diritto amministrativo)*, Enc. Giur. 1 (1988).
M.S. Giannini, *Provvedimenti amministrativi generali e regolamenti ministeriali*, in 3 Foro it. 18 (1953).
E. Giovannini, *L'utopia sostenibile* (2018).
P. Gotti, *Gli atti amministrativi dichiarativi* (1996).
G. Guarino, *Pubblico e privato nell'economia. La sovranità tra Costituzione ed istituzioni comunitarie*, 1 Quad. cost. 35 (1992).
C. Ibba, *Le società legali* (1992).

N. Irti, *Dall'ente pubblico economico alla società per azioni*, 4 Riv. soc. 465 (1993).
C. Latini, *Governare l'emergenza. Delega legislativa e pieni poteri in Italia tra otto e novecento* (2005).
G. Manfredi, *Cambiamenti climatici e principio di precauzione*, 1 Riv. quadr. dir. amb. 28 (2011).
L. Marini, *Il principio di precauzione nel diritto internazionale e comunitario* (2004).
M. Mazzuccato, *The Entrepreneurial State: Debunking Public vs. Private Sector Myths* (2013).
S. Nespor, *La lunga marcia per un accordo globale sul clima: dal Protocollo di Kyoto all'Accordo di Parigi*, 1 Riv. trim. dir. pubbl. 91 (2016).
A. Nicodemo, *Imprese pubbliche e settori speciali. L'autonomia contrattuale e le regole dell'evidenza pubblica* (2018).
M. Occhiena, N. Posteraro, *Pareri e attività consultiva della pubblica amministrazione: dalla decisione migliore alla decisione tempestiva*, 1 Dir. ec. 27 (2019).
G. Pericu, *Le sovvenzioni come strumento di azione amministrativa* (1967).
M. Sambri, A. Muollo, *Il GSE (Gestore del Sistema Elettrico) e il GME (Gestore dei Mercati Energetici). Natura giuridica, funzioni, organizzazioni, tutela giurisdizionale*, in E. Picozza, S.M. Sambri (eds.), *Il Diritto dell'energia* (2015).
A.M. Sandulli, *Abilitazioni, autorizzazioni, licenze*, 1 Rass. dir. pubbl. 11 (1958).
A.M. Sandulli, *Sugli atti amministrativi generali a contenuto non normativo*, in *Scritti giuridici in memoria di V. E. Orlando* (1957).
M.A. Sandulli, *Certificazioni*, 1 Treccani.it (2006).
F.G. Scoca, *Il punto sulle c.d. società pubbliche*, 1 Dir. ec. 239 (2005).
F.G. Scoca, *La pubblica amministrazione e la sua evoluzione*, in Id. (ed.), *Diritto amministrativo* (2019).
D. Serrani, *Lo Stato finanziatore* (1971).
F. Tedeschini, N. Ferrelli, *Il governo dell'emergenza* (2010).
S. Valentini, *L'attività di incentivazione: tipologie e funzioni,* in C. Ferrari (ed.), *La regolamentazione giuridica dell'attività economica: atti del Convegno nazionale di studi organizzato dall'Istituto di diritto pubblico della Facoltà di economia e commercio dell'Università degli studi di Turin, 13-15 June 1985* (1987).
F. Vetrò, *Evoluzioni del diritto europeo dell'energia, transizione energetica e sistema istituzionale: il ruolo del GSE S.p.A.*, in 1 Dir. ec. 501 (2020).
F. Vetrò, *Il servizio pubblico a rete. L'esempio paradigmatico dell'energia elettrica* (2005).