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Chapter 4

Decarbonisation in the Italian energy sector: the role of social dialogue in achieving a just transition – the case of Enel

Serena Rugiero

Introduction

Over the last few years, the Italian energy sector has been revolutionised – alongside global transformations such as the climate crisis, the efficient use of natural resources and the circular economy. Important drivers of change have been in play simultaneously: policies of decarbonisation and the transition to renewable energy; the development of distributed generation; and the new role of the active user-consumer. The evolution of technologies and digitalisation is having an impact on all such processes in parallel with the evolution of the economic regulation of the sector (Ires 2012; Neirotti *et al.* 2018).

The electricity sector is therefore currently experiencing – and will continue to do so in the future – an unprecedented complexity of reorganisation processes that has profound economic and social repercussions for the competitiveness of the industrial system, the organisation of work and the employment of people and their skills.

In line with commitments undertaken internationally within the framework of a just transition,¹ the move from traditional to renewable energy sources cannot fail to take into account the effects that this might have on workers and communities that are dependent on the fossil fuel economy. The energy transition therefore has to be ‘accompanied’, to ensure that workers’ rights are protected and that new good jobs (in terms of sustainability and quality) are made available through interventions to support employment, the promotion of workers’ participation in decision-making, the training of new professionals, and the retraining and relocation of workers affected by the transition to employment in the new low-carbon economy. The proper means of transition, under which we must also respond to the three interconnected challenges of inequality, unemployment and environmental degradation, must be developed through social dialogue between governments, workers and employers, and by means of collective bargaining.²

1. ‘A just transition’ is a campaign of the global labour movement, led by the International Trade Union Confederation (ITUC), which has made it possible to ensure that social conditions are an integral part of the policy, planning and implementation of climate action. Just transition, together with decent work, was included in the Paris (COP 21) Agreement (UNFCCC 2015) and further defined in the global guidelines on the work of the United Nations International Labour Organization (ILO 2017). At COP 24, which was held in December 2018 in Katowice, with the signature of fifty-three countries and the European Commission, the ‘Declaration of Silesia for Solidarity and Just Transition’ was adopted, committing the signatories to take seriously the impact of climate change and climate policies on workers, their families and communities (ITUC 2018 <http://www.greenreport.it/wp-content/uploads/2018/12/Dichiarazione-finale-ITUC.pdf>).
2. The fundamentals to be guaranteed in just transition are: macroeconomic, sectoral and company policies to ensure jobs and dignified work; rights and health and safety at work; social protection; skills development; active labour market policies; and social dialogue and tripartism (ITUC 2017).

In this scenario, social dialogue assumes a fundamental role as a form of governance in the energy transition and a means of ensuring its quality and participatory nature.

Faced with the multi-dimensional and complex nature of sustainability, which requires multi-level governance of policies and their support measures, social dialogue can be effective in supporting the energy transition insofar as it is itself an instrument and form of governance. This is the case given the great potential, still to be fully exploited, of a possible fruitful link between the development of sustainability and social dialogue (ILO 2017; ITUC 2017).

Processes of far-reaching social change, and a radical transformation of economic, technical, institutional and social relations in the context of the ‘new energy paradigm’, in fact demand a form of governance that is based on agreement between all the relevant stakeholders and which is founded on a structural and integrated approach. This must go beyond a linear input/output scheme which is no longer able to deal with the complexity and urgency of the transition to a society based on a low-carbon economy (BROAD 2017).

Thanks to its ability to deal with the multidimensional conditions, complex dynamics and differential impacts of the changes underway, social dialogue – at the European, national and local level – might therefore prove to be a crucial factor in confronting the challenges arising from the transition. It might, furthermore, also be of assistance in terms of identifying and checking the consequences (both expected and unforeseen) as well as the resulting risks (regarding employment, the health and safety of workers, inequality and social exclusion, and energy security, with respect to the locational impact of redevelopment).

From this point of view, it is therefore fundamental to increase the role of social dialogue, first and foremost by strengthening its inclusive nature, through the promotion of an enlarged (multi-stakeholder) vision, based on the involvement of a wide range of potential protagonists. Above all, these must be associations representing the world of work, businesses and public institutions but, in addition, those of experts, environmental organisations and civil society.

In addition to consolidating the sense of responsibility (or accountability) of the various players involved, the practice of a form of wider social dialogue allows the partners to share their points of view and influence the policies or measures that affect them based on shared information and a clear, comprehensive awareness. On the one hand, this constitutes a prerequisite for providing guidelines and orientation while, on the other, it helps the process of arriving at shared decisions (BROAD 2017). This appears essential both in terms of forecasting and the *ex post* management and evaluation of the measures and steps put into practice, the re-orienting of actions and policies, and the dissemination of good practice and information that affects the behaviour, approach and decisions of the collective regarding energy transition.

Within this framework, the Enel case study is particularly relevant. In Italy, the decision has been taken to close thermoelectric plants which are no longer economically

profitable or environmentally sustainable, to redevelop them and to relocate workers through agreements and negotiations based on a ‘participative’ method of ongoing dialogue between the company, the workers and their representatives (Cofacci 2018: 43).

Interest in the Enel case also stems from questions about the potential for repetition in other countries of this ‘model’ of tackling reconversion, in which social dialogue plays such a fundamental role. In this regard, however, it has to be noted that the success of agreements on restructuring and redevelopment in Italy, despite critical issues mainly related to the problems of the sector in question, derives in part from the solidity of the system of industrial relations and the model of social dialogue that actually operates in the Italian energy sector. The exportability of such practices, beyond inspiring principles based on the involvement of all interested stakeholders, must therefore take into consideration local specificities through the creation of *ad hoc* plans tailored to individual situations.

The research work – both desk and field – on which this chapter is based was carried out between December 2017 and November 2018.

The chapter is organised as follows. The first part analyses the general context of the energy sector in Italy (section 1) as well as the framework of energy and transition policies (section 2), in both cases featuring the rise of renewable energy. The next part is dedicated to the Enel case study (section 3); starting from the history of the company, the framework of industrial relations and social dialogue, with its national and transnational agreements, is outlined before we focus on the closure of the thermoelectric plants and the drawing up of redevelopment projects for sites facing the challenges of the relocation of workers and consequent issues in related sectors. Section 4 addresses the future challenges and concludes.

1. The national energy framework

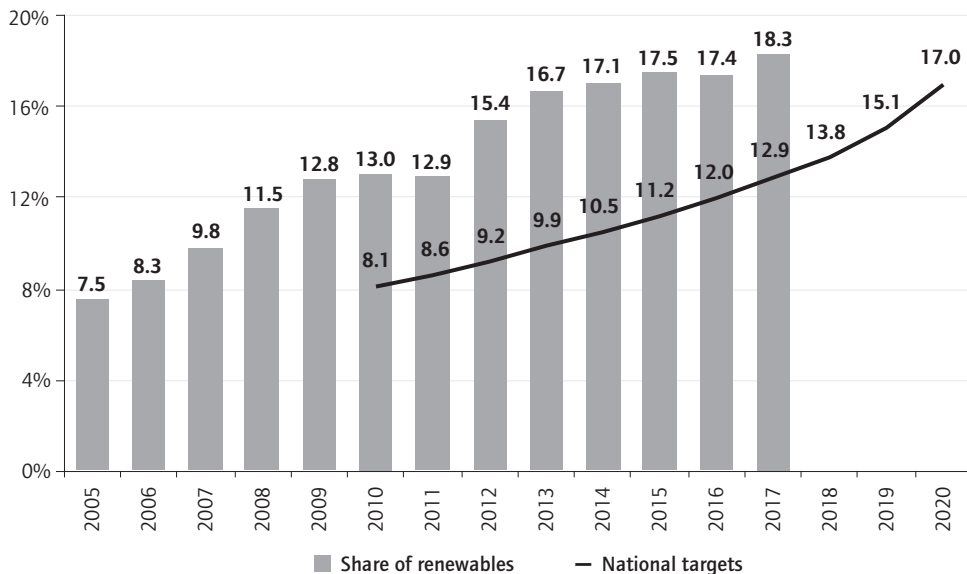
The ‘energy transition’ that characterises our time – understood as a process aimed at striking a new equilibrium identified with a low-carbon economy based on the centrality of renewable sources and on greater attention to efficiency and sustainability in consumption – is not the first in the history of human civilisation. It is sufficient to think of the transition from coal and steam engines to regimes based on oil and its derivatives. However, the advent of a low-carbon society is characterised by its being centred on the building of a sustainable economy, leading to a specific relationship with nature and a particular concept of social welfare favouring the growth of decentralised, low capital-intensive economies based on local supply chains and with an active role for citizen-consumers. On the other hand, it should also be noted that, in the case of the transition to renewable energy, there are also critical points related to the full realisation of the replacement of fossil fuels and the ability to combine profound social change with a new energy paradigm to guarantee the development of employment, the reduction of climate-altering emissions, the fight against poverty and the protection of workers and the locations to which they belong.

Historically, Italy has been characterised by the use of mixed resources dominated by hydrocarbons, with a major dependence on foreign supplies of oil and gas coming from four areas of production: Russia; Algeria; Libya; and the middle east. Italy also stands out by way of a higher price level for energy products compared to the other countries of the European Union, a result both of the energy mix and a higher tax burden on energy products. However, in the last ten years, the Italian energy system has seen unprecedented change in the power generation mix in favour of renewables and methane gas.

In the electricity sector, in 2017, renewable energy sources (RES) covered 35 per cent of total gross production (GSE 2018). Hydroelectric power is the main source of electrical generation from RES, while solar recorded the most significant growth (with around 19 GW of power created in 2018 by the photovoltaic sector).

Again in 2017, the share of total energy consumption provided by renewable sources was 18.3 per cent, a value higher than the 2016 figure (17.4 per cent) and above – for the fourth consecutive year – Italy’s national target for 2020 (17.0 per cent) (Figure 1). Thus, Italy has surpassed the other major European economies in reaching their respective targets (GSE 2018) (Figure 2).

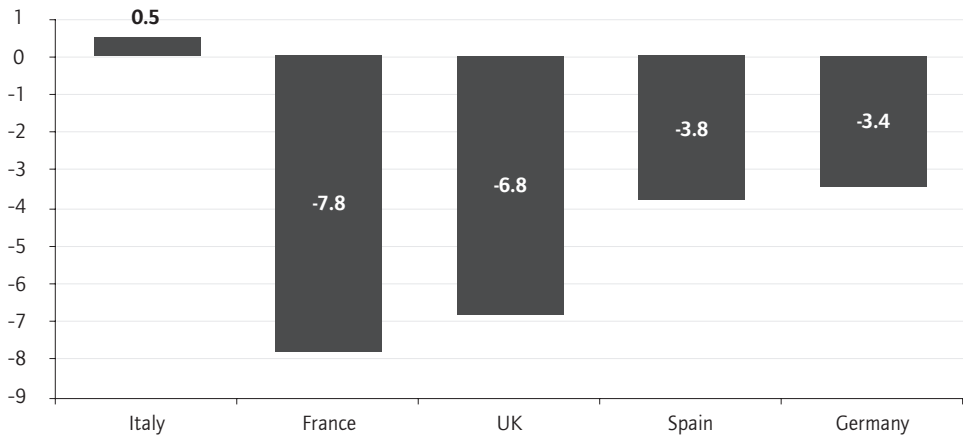
Figure 1 Share of gross final consumption of energy from renewable sources (performance compared with the overall national target, set by Directive 2009/28/EC)



Source: Gestore dei Servizi Energetici (GSE) (2018).

These results have been achieved thanks to generous mechanisms of public support which, however, have had an impact on energy bills in terms of system charges (Rugiero 2012).

Figure 2 Achievement of renewable penetration targets in 2015 vs. 2020 objectives (delta %)



Source: Eurostat.

In addition to renewable sources, the level of energy efficiency was also confirmed in 2017 as being higher than in other OECD countries. The energy intensity of GDP was around 106.7 tonnes of oil equivalent (toe) per million euros, and with a total decrease of 4.9 per cent compared to 2013. Italy have a lower energy intensity of GDP than elsewhere is undoubtedly due to the instruments adopted in Italy since the post-WWII period to counter the historically higher cost of energy in the country. Even so, the margins for improving efficiency are still wide, especially in the civil and transport sector. Currently, the three main instruments supporting energy efficiency are: tax deductions and the new *Conto Termico* ('Thermal Account') for the construction sector; and the *Certificati Bianchi* ('White Certificates') for the industrial sector.³

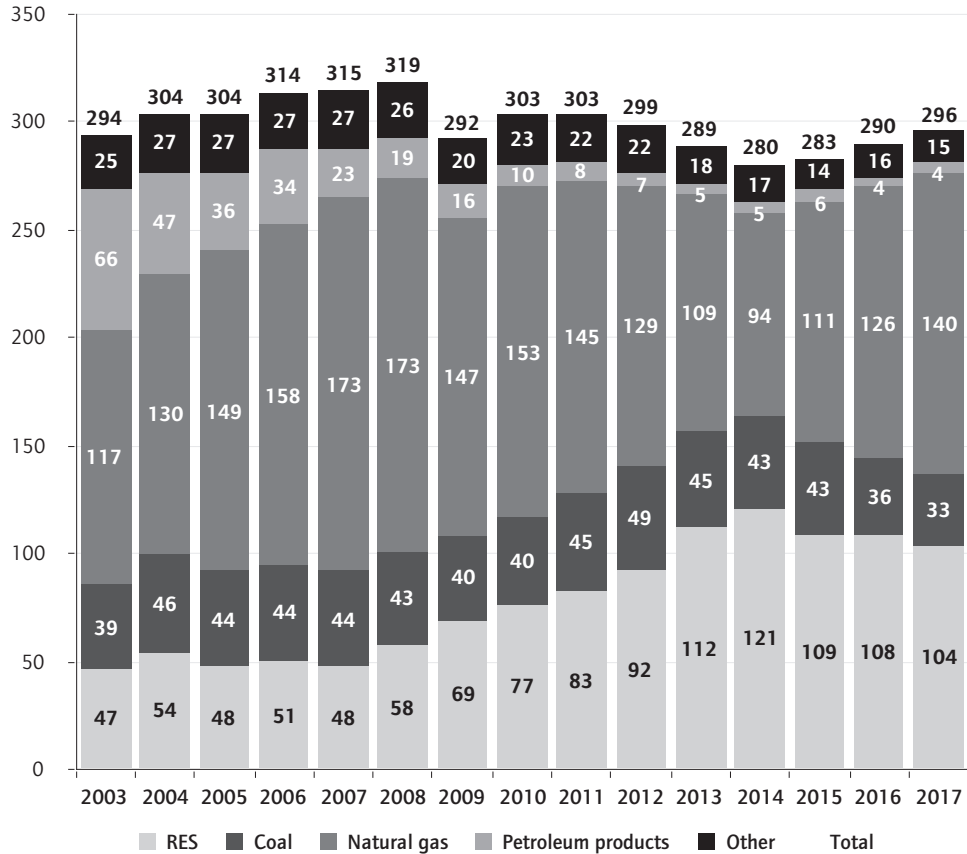
The improvement in energy efficiency has enabled significant energy savings, the reduction of emissions, a lowering of energy bills and, along with the greater impact of renewable sources, a reduction in dependence on foreign sources of supply. The share of domestic energy demand met by net imports remains high (76.5 per cent) but is lower by around six percentage points in comparison with 2010.

The demand for primary energy is being satisfied less and less by oil (which still accounts for about one-third of the total), solid fuels (6.1 per cent) and imported

3. Tax deductions for redevelopment interventions are a bonus that allows the request of an IRPEF refund of fifty per cent of the expenses incurred on specific jobs. The 'thermal account' is a package of incentives and facilities for improving the energy efficiency of buildings and encouraging the production of energy from renewable sources. The 'White Certificates', or Energy Efficiency Certificates, are negotiable securities that certify the energy savings achieved in the final uses of energy as a result of the implementation of measures to increase energy efficiency. This represents an incentive mechanism based on a mandatory primary energy saving scheme for electricity and natural gas distributors with more than 50,000 end customers. For each mandatory year, from 2017 to 2020, savings targets have been set that distributors have to achieve through the implementation of energy efficiency measures.

electricity (4.9 per cent). The contribution of gas, however, is growing and stands at 36.2 per cent (MISE 2018).

Figure 3 Gross electrical production by energy source (TWh)



Source: Gestore dei Servizi Energetici (GSE) (2018).

Figure 3 shows the radical change in the electricity generation mix in favour of renewables as well as the current phase of transition, with an increasing role for natural gas in covering energy needs. This requires the creation of more flexible conditions in the energy system, not least in view of the lower programming capacity of renewables. Furthermore, the development of interactive networks and the digitalisation of the sector also demand innovative measures to ensure the adequacy, safety and resilience of the energy system.

The consolidation of the penetration of renewable energy in the national energy system, as well as being a pillar of sustainable development in the country, also has significant employment and economic repercussions (Rugiero 2011a). Furthermore, it needs to be considered that, in the past, the development of technological supply chains has been insufficient while employment from renewable sources has grown mainly in the phases

of the assembly, maintenance, management and production of some of the components (Rugiero 2011b).

According to the estimates of Gestore dei Servizi Energetici (GSE) (the Energy Services Operator), employees in the wind sector in 2016 (including workers employed in related activities) numbered 3,578 compared to the 11,818 employed in the photovoltaic sector; while the level of labour intensity in the photovoltaic and wind sectors is practically the same: there are thirteen permanent jobs for every €1 million spent on operation and maintenance in both the wind and the photovoltaic sectors. Similar numbers are to be found in the hydroelectric sector. This sector accounts for about 16 per cent of national electricity demand and employs around 11,500 people directly and indirectly.

In terms of biogas plants, Italy is third in the world in biogas production, after Germany and China. Employment levels in this sector were recorded in 2016 by GSE as standing at 6,443 workers. Here, employment levels are, once again, thirteen employees for every million euros spent on operation and maintenance (Neirotti *et al.* 2018).

2. The National Energy Strategy (NES) and the challenges of the energy transition in Italy

The National Energy Strategy (NES), published in 2017, is the ten-year plan of the Italian government to anticipate and manage change in the energy system. The NES is part of a broader strategy for sustainable development, in line with the Paris commitments of 2015 and the UN 2030 Agenda, which form the basis of the National Energy and Climate Plan to enter into force by 2020. The National Energy and Climate Plan is the tool with which all the member countries of the European Union will determine policies and strategies to achieve the decarbonisation goals set for 2030 by the Clean Energy Package (CEP) adopted by the EU (European Commission 2018). The main targets of the package include a reduction in CO₂ emissions by forty per cent, the development of renewable sources to take a 32 per cent share in primary consumption and an energy efficiency target of 32.5 per cent.

The NES is, therefore, a strategic document intended to show the main direction. Currently, also following the 2018 change of government, we are awaiting news on the implementation of the strategy as regards the national agenda. The main concern regarding the NES, in particular from the trade unions, lies in whether Italy will manage to achieve the extremely ambitious objectives that have been set for the transition from traditional sources to renewables – indicated below – while maintaining the security of the system and keeping manufacturing costs sustainable.

The objectives of the NES are: to improve the competitiveness of the national industrial system; to improve environmental compatibility; and to strengthen the security of the country's energy system. As a central objective, the National Energy Strategy aims to reduce Italy's high energy dependence on other countries from 84 per cent in 2010 to 65 per cent in 2020.

Compared to the objectives set by the Clean Energy Package, the goals set by the NES are particularly ambitious. By 2030, Italy intends to achieve a share of 28 per cent of renewables in total consumption, broken down into the following sub-targets:

- 55 per cent renewables in electricity generation by 2030, compared to 33.5 per cent in 2015;
- 30 per cent thermal renewables (renewables for heating and cooling: biomass; heat pumps; solar thermal; geothermal heat) by 2030, compared to 19.2 per cent in 2015;
- a 21 per cent share of renewables in transport by 2030 compared to 6.4 per cent in 2015 (with a consequent increase in biofuels and electric mobility).

These challenging objectives are considered achievable since, at 17.5 per cent in 2015, as mentioned above, Italy had already exceeded the national target of 17.0 per cent for renewables in total consumption set for 2020.

For overall emissions of carbon dioxide, the NES sets reduction targets of 39 per cent by 2030 and 63 per cent by 2050; while, in terms of energy efficiency, a reduction of energy consumption is expected from 118 mtoe in 2015 to 108 mtoe in 2030, thus lowering both energy expenditure and CO₂ emissions.

Another extremely challenging objective posed by the NES is the acceleration of the phasing out of coal – now covering 15 per cent of electricity production – which is set for 2025 rather than 2030. The acceleration of the phasing out of coal makes the objective of continuing to reduce the use of oil even more complex, by putting natural gas into a key role in the transition phase and, therefore, rendering the implementation of substitute infrastructure interventions absolutely necessary. These are made up of investments to strengthen the gas network in anticipation of the growth of the gas quota, not only as a reserve and back-up for renewable sources but also for the role of substitute fuel which it will assume with the abandonment of coal. This would require the diversification of gas supply routes as well as the greater system flexibility to which we have already alluded.

In addition to adaptation measures to address the growing contribution of non-programmable renewable sources, measures are also needed to strengthen the electricity exchange in the country between north and south, as well as the connections between the mainland and Sardinia, where energy security is particularly delicate as a result both of the closure of electricity production plants requiring a new electrical connection and of the launch of the island's methane infrastructure.

The interventions envisaged for the gas system in the transition phase towards decarbonisation are a concern not only for Italy but also for European supplies. In fact, Italy is in a position to become a strategic gas hub for the rest of Europe. Under this strategy, the completion of the TAP (Trans-Adriatic Pipeline), on which work began in the first half of 2016 to bring gas from the Caspian Sea region, is important because it will increase the diversification of supply routes throughout the European market. The

Poseidon gas pipeline will also connect new Mediterranean deposits in Greece and the EastMed Pipeline⁴ with the Adriatic line.

The idea that the transition from fossil fuels to renewables requires a transition period involving the use of gas and the strengthening of the related infrastructure is a source of debate and is opposed by those who believe that the huge investments planned for gas are diverting resources from the development of renewables and who see it as a conservation of the fossil fuel system. In any case, it should be noted that the question of gas is very complex and, as mentioned above, going beyond national borders, it also represents a (thorny) issue in energy geopolitics.

Another delicate issue is employment. On the one hand, the development of renewable energy and energy efficiency has the effect of stimulating the development of the industrial system and national production chains (that were lacking in the initial phase of the growth of renewables). The NES foresees the creation of 150 thousand temporary jobs a year and 80 thousand permanent posts, even if most of these are in maintenance. On the other hand, the considerable development of renewable energy and improvements in energy efficiency, with the resulting contraction in electricity consumption, has produced the effect of a ‘downsizing’ in thermoelectric capacity: in 2012 alone, there was a reduction of 15 GW while reserve margins dropped from thirty per cent to ten per cent in the period 2012-2014.

The problem facing workers (both directly and indirectly employed) at energy sites which are being decommissioned therefore becomes central. The productive reuse of sites does not just involve the thermoelectric sector but also the refining industry which will continue to be affected by the decline in the consumption of traditional fuels, no longer as a result of economic crisis but of the demand for new environmentally-friendly fuels and new carriers. Furthermore, this implies an evolution of refineries in the direction of biorefineries and an increasing use of sustainable biofuels and LNG (liquefied natural gas) instead of petroleum derivatives.

It is precisely the context of the planning of employment and the industrial future of those sites that have reached the end of their life cycle, with the relocation of the ‘excess’ workers engaged in traditional generation, that the Enel case study is all about. This case study represents an attempt to build a model to deal with reconversion, based on dialogue and collaboration between the company and the trade unions.

4. A planned on-offshore pipeline system aimed at distributing natural gas present in a complex of deposits located in the easternmost area of the Mediterranean Sea (Cyprus, Greece and Israel).

3. The Enel case⁵

3.1 History: from public body to multinational company

Enel is the largest company in the Italian electricity sector and one of the leading companies in Europe in terms of installed capacity and reported EBITDA,⁶ as well as one of the main integrated global operators in the electricity and gas sectors. The history of this company is an integral part of the development of industrial and social relations in Italy from the period following WWII (Leonardi and Zito 2018).

Originally an acronym for Ente Nazionale per l'energia Elettrica (National Electrical Company), Enel was founded in 1962 as a legal public entity following the nationalisation of the electricity sector, bringing together almost 1,300 local companies set up at the beginning of the twentieth century to supply energy to the cities and regions of Italy. The task was to complete the electrification of the country and connect the national electricity grid to that of the rest of Europe.

In 1953, Eni-Ente Nazionale Idrocarburi was also born as a *de facto* monopoly in energy supply (in the methane gas sector).

The objectives that contributed to the choice in favour of nationalisation, leading through the 1980s to the presence of large, vertically-integrated energy companies under public ownership and a consequent territorial monopoly, were two-fold. One was to guarantee universality of service and a single user tariff per band; the second to achieve the greatest technical and managerial efficiency with the required level of financial resources in view of the major investments necessitated by the huge growth in energy demand during the period of post-war reconstruction (Ires 2008).

Since the 1990s, these objectives having been achieved and following the trend of downsizing the public sector and the opening up to market competition of those sectors which had previously been excluded (for example, services), the processes of liberalisation and privatisation began including in the electricity and gas sectors where the public hand was particularly prevalent.

Thus, in 1992, Enel was transformed into a joint-stock company wholly owned by the Treasury and then privatised in 1999. The reasons for this choice were to make the service system as efficient and competitive as possible, but also to help the state budget through the exploitation of the assets of those economic bodies operating in public utility services (i.e. both Enel and Eni in the energy sector) (Ires 2008).

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5. In the realisation of the case study on Enel, various methods and techniques of detection were employed: analysis of legislation, of collective bargaining and of the official documents of the social partners; secondary analysis of quantitative data; and in-depth interviews with experts and key witnesses including national and local representatives of the trade unions (specifically those federations operating in the energy sector and the heads of areas and departments of the Italian General Confederation of Labour: Energy and Networks, Economy and Development) and, for the Enel group, Enel's industrial relations manager and the Enel Futur-e project manager.
 6. Earnings Before Interest, Taxes, Depreciation and Amortisation.

The liberalisation of the national electricity market, governed by Legislative Decree 79/1999 (the Bersani Decree) and Law 239/2004, forced the companies to separate the various stages of their supply chains, carrying out a process of both corporate and accounting unbundling. The revolution brought about by the liberalisation processes and unbundling led to a considerable amount of reorganisation affecting the functions of buying and selling to customers, the centrality of the relationship with the citizen-consumer, a new relationship with the economic regulator and the evolution of IT systems related to electronic meters as well as smart grids, metering and billing.

In 2001, two years after the Bersani Decree regarding electricity distribution and one year after the Letta Decree regarding natural gas distribution (Legislative Decree 164/2000), and after long negotiations, the single contract for electricity and gas/water workers was born. 'A shared house for workers in the two sectors,' with the same rules for all, was the aim of the single contract as a means of avoiding competition in the energy sector becoming based on labour costs and not on the quality and reliability of services (Ires 2008: 82). The aim for the social partners was to avoid the practice of geometrically variable rights and protections, dependent on the geographical location of the companies or their properties, whether public or private (Ires 2008).

In 2001, Enel also began a process of internationalisation that led the company to expand in Spain, Brazil, the United States and Latin America. The Italian state, through the Ministry of the Economy and Finance, remained the main shareholder with 23.6 per cent of the share capital.

Currently, the Enel group is present in 35 countries on five continents; it produces energy through a managed capacity of more than 89 GW; distributes electricity and gas through a network that extends for about 2.2 million km; and has almost 73 million end-users around the world. The group produced around 249 TWh of electricity overall in 2017, distributed 445 TWh over its networks and sold 284 TWh. Its revenues amounted to €74.6bn and ordinary EBITDA came to €15.7bn. The group also sold 11.7bn cubic metres of gas.

This multinational company employs about 69,000 people all over the world, half of whom are in Italy.

Today, Enel is the most technologically diversified company operating in the global renewables sector. It manages some 43 GW of energy coming from water, wind, geothermal, photovoltaic and biomass plants. In 2008, Enel Green Power S.p.A. was founded with the aim of grouping together the worldwide interests of the Enel company in renewable energy.

Almost one-half (46 per cent) of the electricity produced by Enel has no CO₂ emissions, thus making the group one of the main global producers of clean energy (Enel 2016).

3.2 The organisational model and strategic innovation in Enel

In 2012, by virtue of the supranational dimensions of the group, Enel assumed the ‘One Company’ organisational model, understood as a unitary and shared production system which, while acknowledging local characteristics, allowed the construction of a common Enel identity in all the countries where the company operated. This model was aimed at the promotion of a system of relations marked by a participatory work culture based on respect for human rights, safety and a recognition of the value of workers and their representatives.

Starting in 2016, Enel then assumed a new global corporate identity, moving from the ‘One Company’ model to the ‘Open Power’ strategy. This was in response to the rapid evolution of the energy system characterised by innovation, sustainability and dynamism, embracing the concept of ‘opening up’ to new technologies, new investments and new partnerships. It can be seen as the keystone of the strategic and operational approach of the group and particularly capable of ‘driving the energy transition’, as indicated in the company’s new brand strategy.⁷

In terms of innovation, it is worth pointing out that, in addition to the push towards a transition to renewable energy, digitalisation is the other key factor in the energy revolution in which Enel is also investing heavily. This includes network/asset generation, back office processes, contacts with customers and relations with stakeholders towards the development of new products and services (electric mobility, home automation) generated by the evolution of information systems and platforms.⁸

It also needs to be remembered that Enel is considered a leading company at international level for having introduced electronic meters, with the first replacements having taken place in 2004-2005. Currently, the company has already started to install a new generation of meters with the industrial plan to change 32 million by 2021 and over 40 million by 2031.

Finally, another fundamental axis of innovation on which the company is focused is the electric car in the context of the strong push towards electrification.

During its almost sixty years of history, Enel has undergone various types of restructuring: privatisation; outsourcing of certain functions and phases; plant closures; internal reorganisations; and trans-nationalisation with important consequences for employment and the management of human resources.

In particular, in recent years, after the economic crisis of 2008, Enel announced and implemented a large-scale new restructuring process and drastic downsizing with significant reductions in jobs. The main reasons for this restructuring were

7. <https://corporate.enel.it/it/mdia/press/d/2016/01/lanuova-enel-un-brabd-open-power>

8. On the significant implications for human resources management systems and for national and company bargaining in Italy produced by the application of digital technologies in the electrical sector at work, see Neirotti *et al.* (2018).

the reduction in demand, due to the decline in industrial and domestic electricity consumption, increased competition in the sector and the closure of obsolete plants that did not comply with recent environmental regulations. These changes had led to an 'overcapacity' in production and, consequently, the need to reduce workforce numbers.

It is in this context that a plan for the decommissioning of old thermoelectric plants was implemented. This has significantly reduced overcapacity with 23 power plants, representing a capacity of 13 GW, having been closed so far.

3.3 The Enel model of industrial relations and the role of social dialogue

The history of Enel is also important from the point of view of industrial relations.

In this regard, what stands out is the presence of a solid system of industrial relations featuring structured contractual practice, high levels of unionisation and relations that tend not to be conflictual between the parties, in part due to the search for constant dialogue both in terms of bargaining and in terms of information and consultation (Leonardi and Zito 2018).

An innovative approach and the ability to manage and anticipate change are also important, as witnessed by the new 'Open Power' operating model adopted by the group. Here, the constant commitment to reinforce the company's reputation for a strong self-image, achieved by the effective and shared management of the social, ethical and environmental impact of the production cycle on the territories and communities involved, as well as within the company itself, is also important. One key application of this approach appears in how the closure of the 23 thermoelectric power plants, due to reasons of economic and environmental sustainability, has proceeded. Enel's related 'Futur-e' project, dedicated to the redevelopment of these assets, including also the reclamation of a mining area (Santa Barbara), also reflects these values.

Over time, the Enel model of industrial relations has led to a nurtured and innovative system of agreements – elaborated below – which have made it possible to manage the economic and social questions posed by the profound and continuous changes in the energy sector, starting with the relocation and retraining of the personnel who worked in the old thermoelectric plants.

In 2012, Enel and the Italian trade union federations in the energy sector (FLCTEM-CGIL, FLAELI-CISL and UILTEC-UIL) signed a Protocol on National Industrial Relations in the Enel Group, replacing the one in force since 1 December 2003. This regulates relations between the company and the trade unions and single trade union representatives.

The new system takes decisive steps forward in terms of adapting to the changed corporate (multinational) and market contexts through:

- a major advance in the participation of the union with respect to industrial guidelines, establishing an industrial relations ‘control room’ with regard to strategic business processes;
- a strengthening of pre-emptive meetings regarding company decisions, with particular reference to reorganisation/restructuring;
- implementation of bilateralism through the establishment of specific committees on: economic and market scenarios; training and employability; safety and protection in the workplace; corporate social responsibility; corporate welfare; equal opportunities; and conciliation. At regional level, the establishment of similar safety and job classification committees is envisaged; at regional/territorial level, a committee on economic scenarios in the energy market may also be employed to resolve possible local problems/situations;
- greater involvement of the single trade union representatives, also through coordination at national and territorial level;
- strengthening the role of the trade unions in the monitoring of professional skills (a process which takes place every six months) as a part of the revision of the job classification system in order to represent more effectively the relationship between job title and activities given the rapid nature of occupational evolution.

In this new model of industrial relations, social dialogue takes place at local level through the regional secretary of the union federations in the energy sector and the single trade union representatives responsible for each individual production unit; while at corporate level it is managed by the human resources department. The agreement also emphasised the need to create an ‘International Industrial Relations Protocol’.

On 9 May 2013, given over-capacity and the announcement by Enel of about two thousand redundancies, and after long negotiations with the trade unions (FLCTEM-CGIL, FLAEI-CISL and UILTEC-UIL), the Agreement for Early Retirement and Intergenerational Solidarity was signed. This Agreement, using the so-called ‘Fornero Law’ (Law No. 92/2012) on the reform of the labour market and pensions system, provides for some sort of ‘generational relay’: incentives to leave or retire for a large number of people, in production as well as distribution areas, in order to make room for new staff (Di Nunzio and Pedaci 2015). According to the Law, the agreement establishes that the company can offer early retirement to its employees, as long as it is entirely at its own expense. In the face of these retirements without penalties, and in agreement with the social partners, a turnover in labour was expected based on the employment of workers aged between 18 and 29 through vocational apprenticeships, with these workers being allocated mainly to operational, technical-specialist and commercial positions. Between 2013 and 2014, this Agreement allowed about five thousand workers to retire early, creating the conditions for the recruitment of almost three thousand younger people.

With regard to the issue of the employment of young people, the social partner-based initiative also included an agreement defining a pilot programme for apprentices alternating between school and work, aimed at students in the fourth and fifth years of technical institutes. Signed on 13 February 2014, this has allowed the entry of additional young personnel into the company.⁹

At the same time as the signing of the agreement under Article 4 of the Fornero Law, in 2013, the complementary Agreement on the Functional, Geographical and Intra-group Mobility of Employees (Redeployment) was also signed. This aimed to ensure the internal employment stability of the Enel group in the phase of profound economic change dictated by the energy transition. It sought to regulate occupational retraining and the relocation of surplus personnel in traditional energy generation to other business units in the company.

In terms of social dialogue, redeployment is part of a national discussion with the secretaries of the union federations on the issues of business strategies and changes in the organisation of work and staff, based on various economic and transformation scenarios. This is followed by a joint analysis at local level of the skills and qualifications of individual workers and of the specific prospects for relocation to other parts of the group of the workforce in the old thermoelectric plants who are deemed surplus. Here, flexible criteria are set based on geographical proximity, propensity to change, attitudes and skills, and in order to ensure the stability of employment within the group (Cofacci 2018).

A central aspect is taken by the company's training plans, designed especially in the context of workers' lifelong learning to respond adequately to the need for the continual updating of the skills demanded as a result of technological innovation processes and the digital revolution. These have been elaborated by Enel but are the subject of discussion by the Bilateral Committee on Training and Employability envisaged under Enel's industrial relations protocol (Cofacci 2018).

To deal with the adaptation of the industrial plan to the new strategic divisions of Enel, and in respect of planning up to 2020, intense negotiations took place in 2015 on the renewal of the agreement on redeployment, giving rise to an additional set of agreements with the trade unions.

In particular, the Protocol on Competitiveness, New Energy Scenarios, Innovation and Sustainable Development, with respect to new investment needs in renewables and the 'crisis' situation in conventional generation, provides for the regular provision of

9. Regarding the 'generational relay' agreement, it should be noted that if, in the Italian scenario, the agreement represents an interesting experience that has had important positive effects, reducing the social impact of restructuring, allowing the turnover of labour, supporting youth employment and enriching via work experience the paths of study of many graduates, it has also to be emphasised that, while the workers taking early retirement are permanent employees, with permanent contracts and good working conditions, the new workers are being hired in the company on atypical contracts (three-year apprenticeship contracts) and are, therefore, a more flexible workforce, with lower salaries, than the outgoing workers. For a discussion of the Enel 'generational relay' agreement, see: Di Nunzio and Pedaci (2015).

information and the involvement of the trade unions in the joint management of the redeployment and retraining of workers. The intention is to guarantee the greatest possibility of re-employment in those company areas that have absorption capacity.

Finally, a new agreement was reached on the application of Article 4 of the Fornero Law, also for the period from 2016 to 2020, allowing for the early retirement of people who will continue to accrue pension entitlements in the four years following the termination of the employment relationship. ‘This lever will allow the entry of new resources and the profitable re-utilisation within the group of all employees involved in the process of relocation and geographical/professional mobility (redeployment)’ (Cofacci 2018). In this way, a recruitment plan has been defined for the timeframe 2016–2020 based on generational turnover (early retirement and new staff – again through professional apprenticeships – of about three thousand young people) which ensures a turnover in professional skills.

3.4 The transnational dimension of industrial relations and social dialogue at Enel

The culture of industrial relations, based on cooperation with workers’ representatives on the issues raised by the business strategies and economic scenarios arising from the energy transition, is also applied in the transnational dimension to Enel’s activities.

European Works Council (EWC)

At European level, in 2008, a European Works Council (EWC) was set up for the first time in an Italian electricity company. The EWC, for which the agreement was subsequently renewed in 2011 and then again in 2016, meets twice per year and is made up of delegates from those European Union countries in which the company is present: eleven are from Italy; four from Spain; three from Slovakia; and two from Romania. A select committee consists of a coordinator and four other members and meets four times per year. Joint training activities are planned, decided by the management and the select committee. The Enel EWC played a leading role in the signing of an international framework agreement on, and then in the establishment of, the Enel Global Works Council in 2013.

From the point of view of the European social dialogue, the declaration of the commitment of the European social partners (i.e. Eurelectric – The Union of the Electricity Industry; and IndustriAll Europe and EPSU – the European Union of Public Service Unions) on the themes of just transition and employability resulted in November 2017 on a joint statement on ‘Just Transition’. This established a shared desire and commitment responsibly to manage the social impacts of transition by foreseeing employment crisis situations, investing in training and reskilling, and supporting the development of employment connected to the industrial processes of energy transition so that they are green jobs, but also decent ones. It also envisages the provision of support measures for those companies, regions and local communities that are linked to carbon-intensive activities in their process of adapting to the green agenda.

The Global Framework Agreement

On the global level, a Global Framework Agreement was reached in 2013 with the international trade union federations IndustriAll Global and PSI (Public Services International). This is currently being renegotiated with a view to an extension corresponding to the global expansion of the group after its merger with Endesa, a Spanish multinational company in the sector (including EU countries, Russia and Latin America).

The Agreement, in addition to respecting fundamental rights of work in all areas in which it operates,¹⁰ is characterised by the centrality of the theme of industrial relations compared to those of corporate social responsibility. The Global Framework Agreement is, in fact, a system of information and consultation which integrates normal negotiating practice, expanding the scope of the issues to be examined and the achievable objectives.

In particular, the parties have agreed to implement a group-wide industrial relations policy with the following main objectives:

- to inform the trade unions when group-wide strategies are being implemented, including procedures and deadlines;
- to establish guidelines to achieve a better balance between business objectives and employee expectations in terms of clarity, ease of implementation and effectiveness;
- to prevent and manage disputes in a reasonable manner, with due respect for the responsibilities of each party, customer needs and quality of service.

The Agreement establishes guidelines for social dialogue, which is considered to be the pre-eminent approach for addressing issues affecting the interests of the company and its employees. The measures include the creation of the Global Works Council as well as multilateral committees.

The Global Works Council is a body for information and consultation representing all the employees in the Enel Group. It has no negotiating role and neither is it a second forum for issues dealt with at national level. The Global Works Council has established three thematic multilateral committees focusing on: health and safety; training; and equal opportunities. These are joint bodies whose role is to ensure the application of the principles contained in the agreements.

10. In 2004 Enel, as a member of the United Nations Global Compact, signed the group up to the ten universal principles on human rights, labour, the environment and the fight against corruption. The Global Framework Agreement affirms the relevance of respecting these fundamental principles in line with the UN's Universal Declaration of Human Rights and its Guiding Principles on Business and Human Rights, the basic conventions of the International Labour Organization (ILO), the ILO's Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy, the UN Global Compact and the OECD guidelines on Multinational Companies and Country-Specific Regulations.

With regard to this model of transnational company agreement, the greatest challenges remain those of monitoring its concrete application at local level, especially in contexts characterised by a less advanced development of the social partners and in the social dialogue, as well as the promotion of a more inclusive representation of local unions in countries where the company is present.¹¹ Another problematic aspect is the risk that the tools of global social dialogue tend to become, as observed by one interviewee, ‘A kind of appeal court for local issues,’ given the difficulty in finding agreed solutions in local situations which have very different collective bargaining tools.

Interest in the agreements signed by Enel at global level and in Italy has led the ITUC, engaged globally on the themes of just transition, to involve the Enel group in defining guidelines for multinational companies in the management of the energy transition. This was published in 2018 on the B Team website (a network of large companies in various sectors committed to a better, more sustainable, way of doing business) and by the ITUC’s Just Transition Centre.

3.5 Enel’s *Futur-e* project: from the closure of plants to rebirth with new uses

In Italy, the agreements between Enel and the trade unions for a ‘participatory’ management of reorganisation processes in the face of the energy transition, and on the security of employment levels and employability, have found an important first application in the management of the closure of thermoelectric power plants and their redevelopment. This has been via the circular economy project known as *Futur-e* which is aimed at identifying new sustainable development opportunities on all these particular sites (see Figure 4).

Up to now, all the workers who had been employed in traditional generation in the plants which have now been closed have been relocated on a voluntary basis, thanks to the joint work of the company, the union and the people concerned.

In addition to encouraging generational change through the Agreement on Early Retirement and Intergenerational Solidarity, a sort of internal labour market for the group was created in the wake of the instruments developed on redeployment in 2013 (and renewed in 2015). Enel was faced with employment surpluses in some sectors and took the responsibility of searching, through its HR structures in all its business lines (globally, nationally and regionally), for potential relocations of these workers in branches of the business with greater development prospects. Staff transfer and re-employment are managed in such a way as to find a balance between the needs of the receiving organisation and the characteristics and expectations of the people being relocated, with the latter accompanied by a process of retraining and technical training. ‘Employability’ and ‘lifelong learning’ are, therefore, the two keystones of this relocation and redevelopment process.

11. In this regard, see the contribution by Leonardi and Zito (2018) on the group transnational agreements signed in Enel and Eni.

The internal labour market that brings together those in the group who are looking for human resources and those who are having to relocate them can, therefore, also transcend national boundaries. This is the case both by virtue of the multinational nature of the company and considering that the elevated technical and professional know-how of Enel workers represents a wealth of knowledge that is transferable to business functions abroad.

At the centre of the debate on the social consequences of the transition from traditional energy sources to renewable ones, however, there is a concern not only with the protection of ‘direct’ workers. Concern is also present about the impact of such decisions on satellite activities and, therefore, the problem of employment loss in local communities the development of which had been closely linked to the presence of the plants that have now been decommissioned.

The Future-e project

It is this second aspect which is addressed specifically by the *Future-e* project, launched in 2015, for the redevelopment of Enel assets that have reached the end of their useful life. Once the problem of internal workers has been resolved upstream, a site conversion programme begins based, in the majority of cases, on a ‘competition project’.

The basic idea is that, for any new investment project, instead of exploring new locations to build from scratch, to consider whether it would be possible to re-use existing assets (which have the advantage of being already perfectly connected to infrastructure, waste networks and the electricity grid), through the circular concept of ‘using one structure to make another’. From this point of view, according to the company, the *Future-e* project can also be exported to other countries because it is applicable in all those situations where there is a problem of unused assets, including in other industries. What is also apparently replicable is the process which has been developed by Enel to manage the redevelopment, the main stages of which are described below.

The first step – introduced with the recent inclusion of a twenty fourth site into the *Future-e* project, the Santa Barbara area which, as a former mining area, is a very different asset from the 23 thermoelectric power plants¹² – is to hold a preliminary phase in the project competition which aims immediately to ensure the involvement of all local stakeholders. This is represented by an initial exploration of the ideas and demands from within the area, carried out by interviews with a wide range of local stakeholders (local institutions, environmental associations, trade unions and entrepreneurs in the area), to seek suggestions from those who live in and know the territory about what they consider to be the most suitable ideas for its redevelopment. In this way, instead of basing the conversion on external ideas from participants in the competition, a bottom-up approach is used which aims to provide precise indications

12. Moreover, the inclusion of the Santa Barbara area more than doubles the portion of Italian territory involved in *Future-e* considering that this site alone has a surface area of 1,600 hectares on top of the total of 1,300 occupied by the 23 thermoelectric plants.

in the tender on the sorts of project proposals which would be most welcomed within the community.

Subsequently, a project competition tender is launched, in which participants are asked to propose a winning idea, accompanied by a full-blown project proposal complete with business plan and an assessment of the expected social impact (in terms of jobs and related activities in the territory). The project proposals are evaluated by a judging panel including local institutions (regional and municipal), in conjunction with the local university and the Polytechnic of Milan, Enel's technical partner in the *Futur-e* project. The technical evaluation considers the suitability of the proposals based on the quality and innovation parameters of each one, as well as their application of the concepts of the circular economy and their environmental, economic and social sustainability. Only those projects found suitable at this point move to the scrutiny of economic evaluation which, if accepted, is followed by negotiations, preliminary contracts of sale and, from then on, by preparatory activities for the implementation of the redevelopment project (possible reclamation, demolition, etc).

Of the 23 thermoelectric plants in question, nine have already begun a conversion plan. With regard to the type of redevelopment project, the proposals involve various ideas for the re-use of facilities such as tourism/hospitality, biotechnology centres, multifunctional centres, exhibitions of local food and wine, recreation centres for older people, etc. Some of the sites have been reconverted internally: for example, for the Carpi site (a turbogas plant that extends over an area of 76 thousand square metres) and for part of the Trino site (a plant of about 90 hectares, of which 24 are home to the decommissioned plant), it was decided to create two centres to optimise the internal logistics of the Enel group.

Generally, however, there is a tendency to favour diversification as a means of avoiding single customers, especially in the larger areas. In this sense, going back to the examples above, for the remaining part of the Trino site a redevelopment proposal has been made for a theme park dedicated to the automotive industry – with research labs for electric cars and a dedicated area with charging stations, parks, spaces for innovation and services – to which is also added a section for innovative agriculture. Many of the sites currently included in the *Futur-e* project are also in areas characterised by a rich natural heritage, as in the case of the Piombino plant, which is a site of national interest. For its redevelopment, a multi-functional project has been envisaged: a tourism-hospitality, commercial and innovative agriculture site and, if authorisation is obtained, the redevelopment of a marina as well.¹³

According to the company, one of the most significant challenges for the *Futur-e* project, especially in its next stages and considering that the number of sites to be redeveloped will grow in Italy as well as abroad, is the need to attract a wide range of strong investors and developers, including foreign ones. In fact, this appears to be a

13. To find out about the various redevelopment proposals for the sites, which are very different to each other, the *Futur-e* website can be found at: <https://corporate.enel.it/it/futur-e>

fundamental condition for success in redeveloping all the plants that will have to be decommissioned, bearing in mind that, in Italy, some of the most problematic plants, such as those that use coal where closure plans have been brought forward to 2025, have still to be shut down while the ‘carbon zero’ target involves the decommissioning of all currently active plants by 2050. However, this requirement clashes with a number of obstacles that risk discouraging potential investors, especially foreign ones, such as the long time required to obtain permissions.

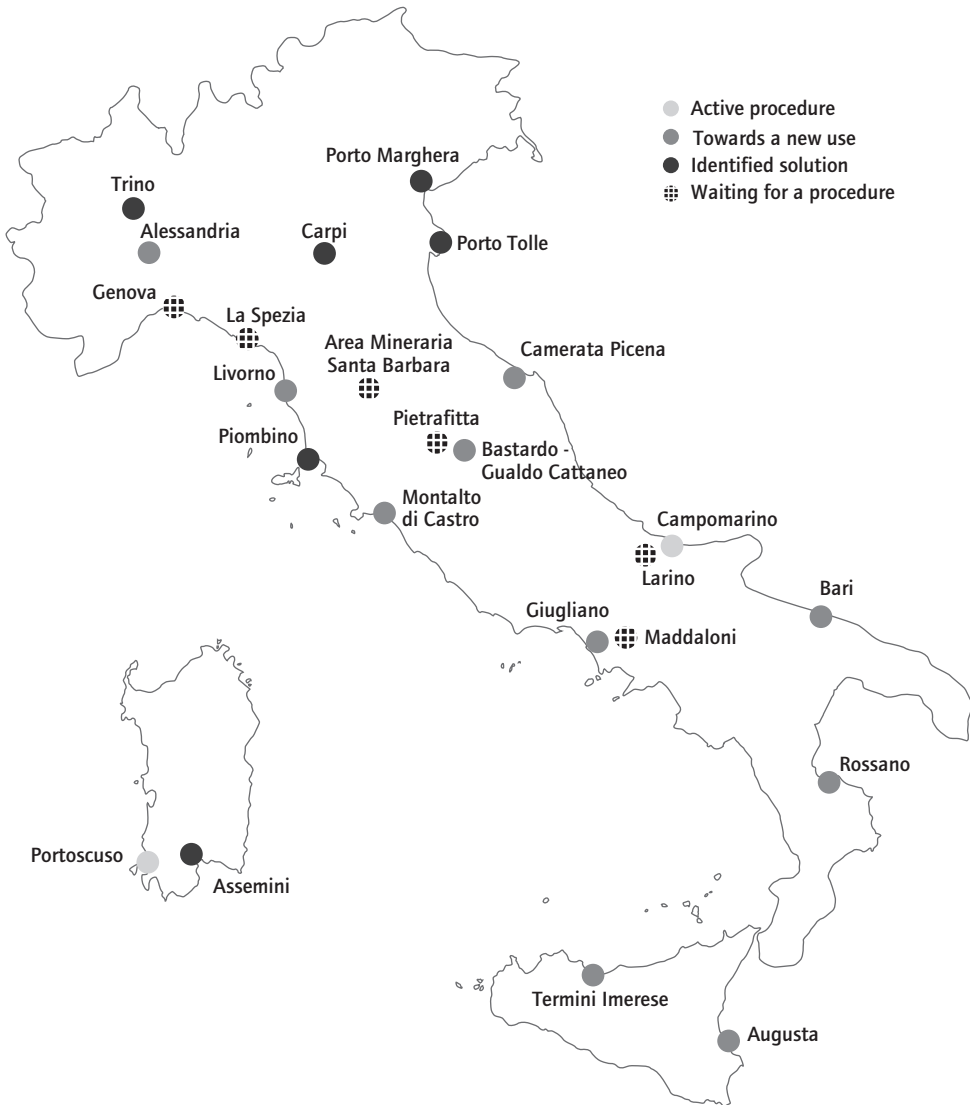
With regard to the *Futur-e* plan, the position of the trade unions has highlighted some critical issues. The trade unions have proposed a gradual programme for the shutting down of some plants and, for others, a review of the reduction/adaptation process. More generally, the trade unions have criticised a lack of information and low involvement in these processes with respect to which, as mentioned, the involvement of the locality has now been strengthened by the attempt to listen to all local stakeholders regarding their ideas for redevelopment, even in the face of possible conflicts at local level.

‘To this end it is necessary, at every institutional level at which decisions are made on the matter, to define the means of participatory democracy and the active involvement of local people, workers and social partners.’ (FILCTEM-CIGL *et al.* 2017: 12)

In respect of sites where functions have been reduced but not shut down, the unions have reported problems related to work overload due to staff reductions and increased health and safety risks. In addition, the trade unions have criticised the outsourcing of activities by tender. In their joint note (FILCTEM-CIGL *et al.* 2017), the unions have proposed in response:

- increased use of phased withdrawal in the process of the disposal and/or reduction/adaptation of plants;
- new investments in some plants to make them more flexible and adaptable to the needs of the market;
- the insourcing of activities;
- recruitment taking place appropriately in advance so as to allow the adequate passing-on of experience between those leaving and those starting work with Enel.

Figure 4 Map of the existing sites included in the *Futur-e* project, as of 2019



Source: Author's processing of a map taken from the *Futur-e* project website, <https://corporate.enel.it/it/futur-e>

4. The challenges of the near future: concluding notes

It is evident from this case study that the presence of a solid system of industrial relations, with strong unions, historically non-conflictual relations between the parties and an elevated propensity to seek negotiated solutions, is fundamental to the success of the agreements on redevelopment and restructuring in Italy. These aspects must be taken into account from the perspective of the replicability of the experiences of Enel in

other contexts – something which is partly already inherent in the multinational nature of the group. The export of such practices has to take into account local specificities and be supported by *ad hoc* plans tailored to individual situations (Cofacci 2018).

However, even at national level, the energy transition path being managed by Enel has many challenges to face in the near future that could put a strain on the ongoing dialogue between the social partners that has, so far, been a positive characteristic of the reorganisation and relocation processes. Moreover, it should also be borne in mind that 2019 is likely anyway to be a very challenging year for the maintenance of the instruments and social dialogue which have been built up in Italy, since this is the year of the renewal of numerous agreements: the collective agreement in the sector, at national level; but also agreements that affect both the European Works Council and the Agreement on the global version.

The closure of all the plants, beyond those already decommissioned, has to be measured in terms of the compatibility of the plan with the problems of network security and system stability and, in particular, with the choice to bring forward to 2025 Italy's abandonment of coal. In such a case, it is the largest plants – for example Brindisi and Civitavecchia – which will have the greatest impact on the territories in which they are located, and which also represent the economic driving force behind those areas. Therefore, their disposal requires careful planning in spite of the short time available.

The commitment of the company and the trade unions up to now has demonstrated that even the use of all the possible tools available to underpin job security is not sufficient to manage the full set of consequences that plant closures have for satellite activities. This requires greater involvement at institutional level.

The success of the redevelopment processes, and of the energy transition in general, requires greater integration between company and public policies. Only complex planning, both public and private, is able fully to translate the redevelopment of entire portions of the territory of Italy into opportunities for a productive and occupational renaissance.

Within this framework, the national planning and coordination capacity of all the involved parties are fundamental factors which must accompany the transition to the new energy paradigm.

Furthermore, the complexity of the reorganisation processes involved in thermoelectric production will, on top of the reorganisation processes within the network itself, have increasingly to deal with the reorganisation of the market, considering in this regard the passage – now close – to full liberalisation with the elimination of the standard offer regime scheduled for 1 July 2020.

Ultimately, there appears to be, on the one hand, a need for the effective coordination and planning of the energy transition in the context of a clear strategy at national level; and, on the other, the strengthening of social dialogue at all levels as a decisive factor in producing a just transition, in the light of the great potential that this has as a form

of governance in the transition to a low-carbon economy (ILO and ITUC 2016; ETUC 2017).

Social dialogue can, in particular, play a crucial role in ensuring that the emerging energy alternatives are inscribed in profound social change capable of combining employment development, reducing climate-altering emissions, combating poverty and protecting workers and the territories to which they belong in the transition from traditional energy sources to renewable ones.

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