Smart working and the organisation of labour: smart working and internal labour markets in Italy

Case study – Enel

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Introduction

The present case study has been realised on Enel, which is the largest electricity company in Italy. As in many EU countries, in Italy the electricity production and distribution sector has been going through significant changes in the last 40 years. Currently there is an ongoing transition from a monopolistic public system to a liberalised market and the whole sector is undertaking innovative processes in order to increase the use of energy sources with lower level of CO2 emissions and to reduce the environmental impact.

The liberalisation process started both in Europe and in Italy at the beginning of the '90s, but the substantial liberalisation of the electricity sector in Italy occurred in 1999 which made the production, import, export, purchase and sale of electricity completely free. The complete opening of the market occurred in July 2007, since then domestic customers have been given the opportunity to choose their energy supplier.

It was important to briefly recall these aspects because they might have an influence on the innovation path as innovation is linked to the characteristics of the market, but also because both in terms of human resource management and industrial relations it is important to consider that in the past this company was a public company and it is possible to perceive a certain level of path dependency under these aspects.

As said at the beginning, Enel is the largest Italian electricity company, the whole group has over 66 thousand employees in 47 Countries, half of them is located in Italy. The whole electricity sector employs about 50,000 workers, therefore approximately 2/3 work of them in Enel. Under the Industrial Relation perspective, due to the history and size of Enel is important to consider that this company plays a leading role in the sector. For example the company collective agreement signed in Enel is considered to be very important especially when negotiated close to a renewal of a sectoral agreement, because it influences the negotiation of the national collective agreement.

The value chain is organised along three business lines: production, distribution and trading so the variety of professional profiles is very wide. In accordance with the WP3 and Project leaders the case study focussed on the specific group of workers of electricians that fix electricity infrastructure when there is a break in the service (on-field workers).

The case study has been realised by means of an analysis of the literature review and the realisation of four interviews with trade unionists working in the sectoral unions at national level and one Focus Group with five workers (electricians employed on the field) members FILCTEM CGIL (Federazione italiana lavoratori della chimica, tessile, energia e manifatture - Confederazione Generale Italiana del Lavoro).[1]

Management of out-of-office work

In order to understand the implementation and management of remote work for the selected group of workers we need to understand the key technological changes that occurred in their work in the last few years due to digitalisation processes. In fact these workers have always been remote workers as they are on-field workers and they did not experienced the same change during the pandemic as office

[1] The interviews and focus group have been realised jointly for IrSmart and Digiqu@pub (https://www.ose.be/digiqualpub/) Projects.

workers. However, their job has been changing due to the change of technological instruments brought about by digitalisation processes.

In a general overview, digitalisation in Enel took place so far aiming at improving energy efficiency, productivity and the sustainability of the system. The most relevant technological opportunities applied in the sector are the so called "Smart Grid", big data analytics, blockchain technologies to guarantee traceability along the value chain and IoT instruments for an automatised maintenance of networks. Big data analytics allow the performance of so-called "predictive maintenance" as the analyses of previous interruptions allow the company to foresee and locate possible new breaks.

However, according to the interviews, while the implementation of digital processes in Enel has been much publicised, actual implementation was stalled prior to the Covid-19 pandemic. The pandemic led to a fast and deep transformation process towards more widespread digitalisation.

Currently the most relevant changes brought about by digitalisation which have an impact on labour, in particular on employees working on the field are listed below.

- Drones for maintenance activities. Drones are used to make the inspections and evaluate the conditions of the grids, can be used at a certain distance from the place to be inspected, can collect images to be transferred.

- Workforce Management Programs (WMPs). Before the introduction of WMPs workers started their working days by reaching the office in order to receive the list of interventions, afterwards they could travel to the different locations where it was needed. Nowadays, thanks to WMPs, they start their working day directly from home/from their van as the program installed on tablet/smartphone provide them with a list of interventions to be made. Once they have terminated the interventions, they have to do some administrative tasks in order to "close" the work procedure.

- Specific applications for smartphones. The smartphone is used for telephone calls but, more importantly, there is a large number of applications that workers are required to use. By means of these applications workers are asked to trace the work they do taking pictures of their work while there are working, and they can access relevant files remotely (like maps of the grid). Applications are also used to guide workers that are fixing a broken electrical system, there are tutorial that explain how to fix problems and workers, even if very experienced and competent, are required by the company to follow the instructions from the tutorial. They can also print out documents with a portable printer.

In the coming years there will also be important investments in the Smart Grid, in particular the Enel the programme "Grid Blue Sky" has the objective of creating a smarter electricity network basically able to distribute in a more efficient way the electricity and to communicate in real time the state of the art remotely to a centralised system. This might have further significant impact on working conditions for electricians working on the field.

Working conditions in out-of-office work

In the following table the main effects of the most applied technologies on working conditions are displayed.

According to the interviews and the focus group, drones have large positive effects on working conditions because can help in detecting problems on the grid in a safe way as allow for remote inspections in places such as tunnels or other risky locations. From this perspective workers perform the job, which is controlling the grid, being faraway from it. Moreover, they can collect pictures and videos that can be transferred so allowing other colleagues in other places to work on the problem.

Drones also require new competences and are perceived by workers as a new technology that requires a true upskilling and increase in new knowledge. Given the specificity of the competences required, the company had to look for them on the market, in fewer cases existing workers have been upskilled. The use of drones has no implications on working time.

Table 1 – Technologies and working conditions

	Drones	**Workforce management programmes**	**Applications**
Safety	+	+	+ & -
Competencies and Skills	+	+	-
Remoteness	+	+	+
Working time	=	=	+
Autonomy	=	+	-
Work-life balance	=	+	=

With regard to workforce management programs, the shift towards them improved workers' life as they travel less (thus reducing exposure to the risks of accidents) but also because they had to acquire new competences, moving from being mainly operative workers towards administrative and managerial tasks. Workers had to become progressively more multi-skilled. In this case new skills have been developed by means of learning courses, allowing blue-collar workers to learn the use of the instruments and also new tasks that could be performed. Like in the case of drones, WMPs have no implications on working time.

The positive picture illustrated so far changes looking at the applications on smartphones. The applications for tracing and guidance are regarded mainly negatively by workers. In particular the monitoring/tracing activity is additional to the normal working tasks. Workers are required to document constantly, by means of pictures, the work realised. This makes work extremely long as the monitoring activity takes time, which generates an enormous increase in work intensity, and longer working hours. Moreover, workers believe that their work became more unsafe because often they have to work with one hand, sometimes also in dangerous positions, while taking pictures with the other. These elements increase the possibility to be injured while working.

With regard to the applications for guidance, workers find them useful because they have an explanation of the work to be conducted, however they think that these tutorials reduce the competences of the workforce. By means of this application it is now possible to have workers with lower level of experience that can perform their duties just following the instructions of the application. Autonomy decreased in all the aspects, in task scheduling, in task organisation and in problem solving. According to the workers attending the focus group, this allowed Enel to reduce labour costs as many tasks could be performed by external companies with less experienced workforce, often belonging to sectors applying different and less expensive national collective agreements.

Overall it can be noted that all the technologies applied have, overall and in different ways, increased the level of remoteness of work.

From the evidence collected, digitalisation in Enel generated both positive and negative impacts on job quality, depending mainly on the profession and on the technologies applied. The problem is not the remoteness itself because these workers have always been "remote" but the change in work organisation due to the new technologies.

The communication with the company itself has changed under two aspects:

1. All the information collected on the field or needed by the workers are exchanged via mobile/PC.
2. In the past the offices collecting the information from the grid and coordinating filed workers were several, now there are only a few central control offices that coordinate a larger number of teams on the field.

In general terms the increasing possibility to control electric networks remotely led to a reduction of the required workforce that work along the distribution lines, decreasing employment security. The possibility instead for technicians to start their shift directly from home, without going to the office, improved workers' life as they travel less and have to acquire new competences. Also the use of drones led to an enhancement of the competences needed in electricity companies. However, the use to applications and tablets to monitor and tracing working activities made work extremely long, intense, and more unsafe.

Finally should also be pointed out that through WMPs ad applications there is a risk of a possible shift from dependent work to autonomous work as these technicians have the technology, the competences and a work organisation that in the end could be easily shifted towards autonomous work.

Skills, career prospects and job security for on-field remote workers

The introduction of WMPs and the use of drones meant that companies required additional skills. In the case of WMPs, the new skills have been developed by means of training courses, allowing blue-collar workers to learn the use of the instruments and also new tasks. However, in the case of the use of drones, given the specificity of the competences required, companies had to look for skilled workers on the market, according to the evidence from the interviews.

As said before, apart from the new competences required for piloting the drones, in general terms workers perceive a decline in the competences required because they are asked to work following standard instructions provided by means of the apps.

With regard to training, workers attending the focus group reported to have several training opportunities. However, training courses are almost all online: this is not appreciated by workers, who believe that it is more difficult to really learn from an on-line training course, more difficult to keep focused, to remember and fully understand. Workers report that often they have seen colleagues combining on-line training with other work tasks, such as, for example, driving their car.

The impact of digitalisation on career prospects and job security may depend on the type of job in the sector. According to the focus group, in some divisions of Enel, digitalisation led to a reduction in the number of workers. For example, a few years ago there were several company contact points for citizens who wished to notify a break in service in the electricity network, with several teams located in different parts of the region. At that time, there was a decentralised service, available in the different geographical areas. Nowadays it is instead centralised, thanks to digitalisation. There is one contact point that can

monitor and locate the different teams and can send one where it is needed. This different form of organisation requires fewer workers for the same geographical area.

In a general context of employment reduction, both job security and career prospects do seem to be threatened by digitalisation. With regard to career development and possible upskilling, the interviews and focus groups showed that new advanced skills are generally obtained by hiring new specialised personnel, as in the case of the drone-pilots. However, the compulsory use of applications and tablets while working in the field, as described before, is leading to a reduction and impoverishment of the skills required for the technicians involved, thus weakening their career prospects and job security.

Role of social partners in ensuring workers rights and decent working conditions in out-of-office work

The electricity sector has an industry-wide collective agreement which covers about 50,000 workers, as well as decentralised collective company agreements. Looking at the social actors which participate in the collective bargaining process, the most representative trade unions are Flaei-CISL, Filctem-CGIL and Uiltec-UIL, which are all affiliated to the three 'umbrella' confederations CGIL, CISL and UIL. The most important employers' associations are Utilitaria and Elettricità Futura, the second of which is affiliated to Confindustria. Historically, Utilitaria tended to represent the so-called multiutility companies, whereas Elettricità Futura was more focussed on the specific electricity sector. However, this sharp distinction is progressively disappearing because of the changes in the electricity market and the core business of its players.

Multiutility companies are public utility companies, which may be public or private, national or local, and have undergone significant changes over the last 15 years in parallel with a process of convergence leading them to operate simultaneously in several sectors (electricity, natural gas, water, telecommunications), with a strong presence in the final stages of distribution and sale. Their growth was encouraged largely by the liberalisation and privatisation of public services and the consequent corporate reorganisation process that affected all the main operators in the sector.

The electricity sector is characterised by a relatively small number of very large companies, which makes it very different from the rest of the national industrial sector. Indeed, Italian productive structure is primarily characterised by small and medium size companies; industry-wide collective agreements play a key role in this rather fragmented structure by regulating economic and working conditions. On top of the common general standards and rights established by industry-wide collective agreements for the different industries, there is a number of decentralised company agreements aimed at providing further and integrative economic and normative elements for workers.

The electricity sector is thus dominated by a very small number of companies, particularly the ex-monopolistic national-owned company Enel, which accounts for about 57% of total employment in the sector. According to the interviews, therefore, company agreements in a way tend to influence industry-wide collective agreements. This is the reason why, as is currently the case, company agreements in Enel often pre-empt national collective bargaining, where possible; these company agreements determine the most strategic elements, which are later developed in the national collective bargaining.

The three largest sectoral trade unions reflect in a way the political orientation of the three confederations they belong to. Fictem-CGIL and Uiltec-UIL are industrial unions that cover a large number of sectors and industry-wide agreements while Flaei-CISL covers only the electricity sector and

the related agreement. Thus, the former tend to take a broader approach to contractual issues, including matters that may go beyond the electricity sector. Overall the unionisation rate in the sector is about 50%.

The last industry-wide agreement was signed in 2019, and the bargaining process for its renewal will be launched between May and June 2022. The key issues addressed at the time were:

- Specific attention paid to young workers, with the introduction of mechanisms that could allow them to accumulate additional resources for their future retirement;
- Introduction of specific measures for cases of harassment or gender-based violence in the workplace (a highly innovative issue addressed for the first time in an industry-wide contract);
- Coverage by the agreement of companies working on renewable sources of energy with fewer than 25 employees, which were formerly covered by other industry-wide contracts such as those for the mechanical or the service sector. This would make it possible to have one agreement for the entire electricity sector, thus increasing salaries and improving workers' rights. Moreover, from a strategic perspective, this point was particularly important, as the renewable energy sector is growing and will become more and more relevant in the future.

The agreement signed in 2019[2] did not cover points specifically linked to digitalisation. However, in the current process negotiating the renewal of the industry-wide agreement, at least two topics related to digitalisation will be addressed as illustrated in the following section: remote working and the classification of professional profiles.

One of the trade unions' current priorities for the collective bargaining agenda on digitalisation is the regulation of remote working and the related issues, such as the right to disconnect, work-life balance, privacy issues and surveillance of workers. Another priority is the change in the classification of professional profiles, which is linked to digitalisation processes, although indirectly.

An agreement on remote working has recently[3] been signed in Enel and, given the role of this company in the sector, this agreement will probably influence the collective bargaining at industry level. The key values which are recalled in and guided the agreement are:

- 'consolidation of leadership open to discussion, sensitive to people's well-being, results-oriented, leaving wide freedom and delegation to workers in line with Enel 'Open Power' values: trust, responsibility, innovation and proactivity;
- voluntary participation in remote working;
- prevailing role of the company headquarters as a meeting place for activities […];
- strengthening of good practices aimed at better protecting work-life integration, including digital disconnection;
- development of the transversal skills and abilities necessary to face the challenges of the future and to enhance workers' talent;

[2] https://www.gse.it/documenti_site/Documenti%20GSE/Societ%C3%A0%20trasparente/Personale/Contrattazione%20collettiva/Rinnovo%20Contratto%20Collettivo%20Nazionale%20di%20Lavoro%20per%20i%20Lavoratori%20Addetti%20al%20Settore%20Elettrico.pdf

[3] Signed on the 21st of March 2022.

- inclusion as a driver to ensure the success of transformation focusing on the individual […];
- attention to people's needs, both during on-site activities and when remote working;
- intensification of social dialogue as a tool for activating change.'

The agreement then sets out a maximum number of working days per month that can be conducted remotely. It establishes that remote working must be voluntary, and contains a set of rules to ensure the right to disconnect and the right balance between working times and personal life.

Another priority for the collective bargaining agenda on digitalisation is the change in the classification of professional profiles. This aspect is indirectly linked to digitalisation and is very important. Through digitalisation processes and the transition towards renewable energies, the competencies in the sector are changing rapidly, and so are workers' professional profiles. Technical and technological instruments are changing rapidly, new competences are required, so trade unions are trying to reflect and accompany this evolutionary process in the industry-wide agreements, in order to evaluate the emerging profiles properly from an economic perspective and to capture emerging needs and rights.

It is important to point out here that on 29 March 2022, a new agreement was signed between the unions (Filctem-Cgil, Flaei-Cisl and Uiltec-Uil) and Enel called 'Statute of the Person'[4], addressing a wide range of key issues related to the quality of work and workers' well-being. This agreement states that 'to support the green and digital transition, enhance innovation, economic growth, promoting economic and social inclusion and guaranteeing quality employment, the Parties encourage the implementation of programs to improve existing skills to access courses to advance professionally (upskilling) and learning new ones (reskilling), also enhancing transversal skills and soft skills, in collaboration with the dedicated bilateral bodies. […] The enhancement of individual training as a subjective right of the person has constituted a fundamental point of the latest renewal of the national collective bargaining agreement for the electricity sector, as a strategic lever for addressing the challenges of the energy transition and digital innovation.' Moreover, showing considerable openness towards workers' families and suppliers, the agreement also contains the following idea: 'With a view to sharing and generous openness to the outside world, the Parties agree on the opportunity to make available to people outside the company (e.g. family members of employees, employees of contractors and their children) the rich schedule of corporate digital training, through the creation of 'open learning' platforms in which enabled users will have the possibility to benefit from a vast list of training contents on various topics such as safety, languages, energy transition, respect for the environment and biodiversity, circular economy etc., also in order to extend the new culture to the entire Enel ecosystem and creating opportunities for integration into the Company.'

Specific workers' rights linked to digitalisation-related issues can also be found in the 'Statute of the person' signed in Enel. Rights to information and consultation related to digitalisation processes have been addressed in both general and specific terms, as we can see from the following quotes.

'Tools and forms of active participation and involvement of people - valuing subjectivity, professionalism, inclusion, accountability and sharing of results and objectives - act as an incremental factor of individual well-being and at the same time organizationally and collectively. Likewise, the enhancement of the collective dimension, of the active participation of the social parties, of confrontation through an engaging social dialogue, which will find its full expression in the work of joint and constant analysis of the context issues, which the Parties will carry out in the spirit of sharing as

[4] https://www.filctemlazio.it/file/enelprotocollocontrattazioneinclusivastatutodellapersona.pdf

wide as possible of strategic and organizational choices, and an essential key to grow and manage the challenges of the future, from digitalisation to the energy and climate transition, from generational challenge to the transition of work."

"A reasonable right to disconnect, for example, is considered by the Parties to be a lever to help people to protect a healthy balance of private and private life with work, people's well-being and the opportunity to profitably dedicate themselves to their family commitments, interests and passions. It is important to implement a shared set of behaviours on which to base the organization of work without weakening the corporate mission and objectives, as well as regulating the exercise of the right to disconnect."

Conclusions

Digitalisation in Enel had both positive and negative impacts on job quality, depending mainly on the profession and on the technologies applied. In general terms the increasing possibility to control electric networks remotely on the smart grids has resulted in a reduction in the required workforce working along the distribution lines, reducing job security. The possibility instead for technicians to start their shift directly from home, without going to the office, as tablets give them access to all the required data and information, has improved workers' lives. They travel less and have to acquire new competences, moving from being mainly operative workers to taking on administrative and managerial tasks. Workers have had to become progressively more multi-skilled. Also, the use of drones to make the inspections and evaluate the condition of the grids has increased the competences needed in electricity companies, an issue addressed by the hiring of new personnel with specific competences and upskilling of the existing workforce.

However, the use of apps and tablets to monitor and track working activities for technicians working on-site has made work extremely long, intense, and more unsafe. Finally, for those workers starting to work from home during the pandemic, working and living conditions have mainly improved, although the blurred boundaries between work and life can cause stress and overload.

The last industry-wide agreement was signed in 2019; the bargaining process on renewal of this agreement will start between May and June 2022. The key issues addressed at the time were:

- Specific attention paid to young workers with the introduction of mechanisms that could allow them to accumulate additional resources for their future retirement;
- Introduction of specific measures for cases of harassment or gender-based violence in the workplace (a highly innovative issue addressed for the first time in an industry-wide contract);
- The inclusion in the agreement of companies working on renewable sources of energy with fewer than 25 employees, previously covered by other industry-wide agreements such as those for the mechanical or the trade sector. This would make it possible to have one agreement for the entire electricity sector, thus increasing salaries and improving workers' rights. Moreover, from a strategic perspective, this point was particularly important, as the renewable energy sector is growing and will become more and more important in the future.

The agreement signed in 2019 contained no points specifically linked to digitalisation, while in the current process linked to its renewal there are at least two topics related to digitalisation: remote working and the classification of professional profiles.

One of the trade unions' current priorities for the collective bargaining agenda on digitalisation is the regulation of remote working and the related issues, such as the right to disconnect, the work-life balance, privacy issues and surveillance of workers.

Another priority for the collective bargaining agenda on digitalisation is the change in the classification of professional profiles. This aspect is indirectly linked to digitalisation and is very important. Through digitalisation and the transition towards renewable energies the competencies in the sector are changing rapidly, and so are workers' professional profiles. On 29 March 2022 a new agreement was signed between the unions (Filctem-Cgil, Flaei-Cisl and Uiltec-Uil) and Enel, the largest company in the sector, called 'Statute of the Person'; this addresses a wide range of key issues related to the quality of work and workers' well-being.

Annex 1 – List of interviews

ID	Gender	Institution	Sectors	Position	Date
INT 1	Male	Flaei Cisl Reti	CISL/Electricity	Secretary	7/3/22
INT2	Male	UILPA	UIL/Central Functions	Delegate	1/3/22
INT3	Male	FILCTEM	CGIL	Functionary	4/5/22
INT4	Male	FILCTEM	CGIL/Electricity	Secretary	28/03/22
INT5	Male	FILCTEM	CGIL/Electricity	Secretary	28/03/22

Annex 2 – Participants in the focus group

ID	Gender	Age	TU affiliation	Sector	Occupation
FG1	Male		FILCTEM CGIL (Federazione italiana lavoratori della chimica, tessile, energia e manifatture - Confederazione Generale Italiana del Lavoro)	Chemistry, Textile, Energy, Industries	Electrician in Enel
FG2	Male		FILCTEM CGIL (Federazione italiana lavoratori della chimica, tessile, energia e manifatture - Confederazione Generale Italiana del Lavoro)	Chemistry, Textile, Energy, Industries	Electrician in Enel
FG3	Male		FILCTEM CGIL (Federazione italiana lavoratori della chimica, tessile, energia e manifatture - Confederazione Generale Italiana del Lavoro)	Chemistry, Textile, Energy, Industries	Electrician in Enel
FG4	Male		FILCTEM CGIL (Federazione italiana lavoratori della chimica, tessile, energia e manifatture - Confederazione Generale Italiana del Lavoro)	Chemistry, Textile, Energy, Industries	Electrician in Enel
FG5	Male		FILCTEM CGIL (Federazione italiana lavoratori della chimica, tessile, energia e manifatture - Confederazione Generale Italiana del Lavoro)	Chemistry, Textile, Energy, Industries	Electrician in Enel

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