Joint Study EPSU/EURELECTRIC/EMCEF

Joint Study EPSU/EURELECTRIC/EMCEF: ’Towards a low carbon electricity industry: employment effects & opportunities for the social partners’

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Executive summary

The European energy sector faces a number of challenges in the coming years and is at the present time at a crossroads of the different priorities of the European Union - the fight against climate change and the implementation of the EU 2020 strategy. The transformation of the electricity sector will involve changes to the occupational structure, skills and competencies and career paths in the electricity sector. How can the social partners engage this transformation to be a “just transition” ?

According to the IEA, worldwide electricity demand will double between 2007 and 2050. In Europe, growth is predicted to be lower but nevertheless representing an increase of 30 per cent, in a context in which the EU has introduced measures aimed at harmonising its domestic markets and gradually liberalise internal markets for electricity.

In 2008, the distribution of electricity production capacity in Europe by fuel was: conventional thermal represented the main part with 53%, then hydro with 22 %, followed by nuclear with 15%, and finally the RES (without hydro) represented only 10% of the total. But Europe is witnessing a rapid expansion in renewable energies, these include wind, photovoltaic, biomass, geothermal, solar thermal, wave and tidal.

Literature identifies three types of scenarios for Europe’s future energy mix for the period 2030 to 2050: Baseline scenarios, Pro-renewable scenarios, and scenarios that promote a balanced mix. A well-balanced mix combining renewable and traditional energy production is possible, even with a commitment to decarbonising

electricity production as new technologies, like carbon capture and storage, develop. Major advantage of this mix is that it already matches existing demand, and in the future will also require the building of fewer new production sites. The European electricity network ought to be modernised to take into account this energy mix. New grids (smart grids and super grids) will be necessary to provide a more user-oriented service, enabling the achievement of the 20/20/20 targets and guaranteeing high security, quality and economic efficiency of electricity supply. Although a great deal of consideration is being given to the future of these networks, the question of financing remains unresolved.

There is an urgent need to increase investments in low carbon technologies due to the fact that investments currently being considered are deemed insufficient to ensure an efficient economic transition. Future needs are considerable: according to the IEA, globally investments that are required, according to a baseline scenario, are estimated to be $ 23.5 trillion for the period 2010 to 2050, with an additional $9.3 trillion in a green scenario. It is also necessary to secure and optimise investments in order to allow new technologies to progress and evolve. Both public and private investment will be required and international collaboration will need to be better organised in order to maximise the impact of these investments. In addition, financial incentives will need to be established to encourage companies to participate in this evolution.

Electricity companies need to be aware that the European labour market will begin to contract from 2020 due to the number of workers retiring and the lower rate labour market entrants. The impact of these changes will be compounded by the relatively higher age of the Electricity workforce.

In terms of number of jobs, studies consider an increase in the workforce of the electricity sector, but with differences between types of fuels. Coal and oil fuelled power plants will see their workforce reduce, while gas and renewables will increase. Rhythm of deployment of clean coal technologies like CCS will also influence these evolutions. In the distribution field, evolutions are more difficult to estimate, with the introduction of smart meters destroying jobs (traditional meter reading) and creating new ones (advices for reducing energy consumption for example).

The enormity of its impact means climate change will be one of the key drivers in

skills demand for coming decades. It is widely accepted that work in the future will require job holders to possess a higher level of skills than it does at the present and this is due to a number of reasons including the increased use of technology in work. Studies on this subject have identified skill needs in generic skills (leadership…), in STEM skills (science, technology, engineering and mathematics), and in e-skills. For transmission and distribution, new skills would be required to fill the skills gap generated by the technological changes that will be introduced in the future, notably in the context of DSOs (Distribution System Operators) and new tasks will emerge, particularly in connection with the technological risks' supervision.

Skill strategy responses will have to be well organised and must anticipate future skill needs in order to establish effective training programmes for workers. In addition the anticipation of what skills are needed in the future is essential if the appropriate actors are to balance the demands from the industry with the supply of labour with the appropriate skills. Just over a third of employers said that their company has undertaken specific initiatives to forecast their skill and competency requirements for the future.

Skills investment should concern not only the amelioration of training and educational infrastructures and programs, but also about putting in place some incentives in order to motivate workers to follow the training.
Social dialogue appears to be an essential component to make such transition more fair and efficient, but just half of all companies and trade unions who completed the survey stated that discussions have already taken place and that no specific initiatives had been introduced yet. Moreover, half of the employer respondents stated that they were "unsure of the value of discussing the issue [of climate change] with the trade unions", suggesting more needs to be done to mainstream issues related to climate change into the work of social dialogue.

Both trade unions and employers consider that the public authorities have a genuine role to play in supporting the sector adapt in the coming years, especially in improving skills and competencies to match the supply of skills with the demand from companies.

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