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Women in green economy A human capital perspective

edited by Arshad Rab, Lisa Rustico, Selma Terzimehic

Female human capital is increasingly qualified, although largely unexpressed in the European labour market. It is commonly believed that green jobs – renewable energies more specifically – are going to offer unprecedented job opportunities for the European labour force, including women. Yet, being energy a traditionally male dominated sector, women workers could face serious risks and barriers to employment. This, however, is not the norm, especially if we consider a number of business cases showing that a wide range of qualified and high-level career opportunities in the renewable energy sector is also open to women.

The impact of green jobs on female employment has been therefore contradictory. These and other topics were discussed during *Women in green economy*, the second workshop of the WiRES project, hosted by a two-day conference co-organized by Adapt and Etech Germany on the 27th and 28th of May 2010 in Karlsruhe. The event aimed at presenting the results of Adapt research on the role of social dialogue for female human capital development in the green economy. Building on a quantitative overview on female employment, and women participation to education and training in Europe, an

empirical analysis highlighted major challenges and opportunities for women working or looking for a job in renewable energy sector.

The role of social dialogue was addressed by CISL Secretary Ms. Liliana Ocmin, remarking that social dialogue has to play a role at the international level to raise awareness and build a common consensus around the challenges at stake in the shift to a low carbon economy. In recognizing the importance of the international scenario, Mr. Balazs Rossu (Hungary, WiRES partner) pinpointed the main supranational legal issues related to environmental law, equal opportunities and social dialogue in European law. Finally UPEE (Bulgaria, WiRES partner) delivered a joint presentation with the national Confederation of Independent Trade Unions, showing data and best practices in the field of social dialogue for women workers in the renewable energy sector in Bulgaria.

WiRES last thematic workshop is going to be held in Milan on the 16th of July, when participants will discuss how social dialogue can tackle the traditional challenges for gender equality at work in green jobs.

Lisa Rustico

To know more

If you want to know more visit the website of Adapt www.adapt.it. All related information are available to: Progetti, WiRES, and Archivio storico, *Green jobs*.

WiRES



This Dossier has been issued within the *WiRES* project. *WiRES* (*Women in Renewable Energy Sector*) is a project co-funded by the European Commission, DG Employment, Social Affairs and Equal Opportunities, budget heading 04.03.03.01, *Industrial Relations and Social Dialogue*.

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Women in green economy: a snapshot

by Lisa Rustico and Selma Terzimehic

Studies estimate that in 2030 renewable energy sectors will employ 20 million people, while today they employ 2.4 million people, including 1.4 million workers in Europe (800.000 in direct jobs) (Fraunhofer ISI et al., *EmployRES. The impact of renewable energy policy on economic growth and the employment in the European Union*, 2009).

But it is still unknown, how many women are going to find a job in these sectors. Gender-disaggregated data on employment in renewable energy sector as a whole are not available. However, besides the positive expectations in terms of employment creation, serious challenges are likely to be going to affect female employment in renewables. Available data on energy industry reveal this has traditionally been dominated by male workforce: “most managers as well as employees of energy and electricity companies are male. In developed countries, the share of female employees in the energy industry is estimated at 20%, most working in non-technical fields

such as administration and public relations (ILO, 2007). Qualified women with technical expertise tend to encounter obstacles deterring them from engaging in energy enterprises. As a result, the share of female technical staff in the energy industry is at

most 6%, in decision-making positions it is about 4%, and in top-management the share is less than 1% (BPW, 2009). Targeted policies are needed to increase the share of women in the many new positions – technical and non-technical – opening up in green energy sectors” (Sustainlabour, *Green jobs and women workers. Employment, Equity, Equality*, September 2009).

Thus far research concerning the relation between women and energy has mainly concentrated on women as passive users of natural resources (for example, energy used by housewives in day to day activities), while more recent research has focused on the impact of adaptation and mitigation policies on gender differences, by also remarking the potential role of women as entrepreneurs in energy sector.

Obstacles and barriers to female participation to the green labour market reflect traditional equal opportunity challenges remarked by organizational and gender studies. Moreover, women in green jobs’ analysis recalls those topics brought

about by studies on women workers in non traditional occupations: the majority of green jobs – broadly defined as “those that contribute appreciably to maintaining or restoring environmental quality and avoiding future damage to

the Earth’s ecosystems” (UNEP, ILO, IOE, ITUC, *Green Jobs: Towards decent work in a sustainable, low-carbon world*, September 2008)– are likely to require qualifications, skills and abilities traditionally disregarded by women, that is to say those where women represent less than 25% of the total workforce. Engineers, technicians and electricians are required by renewable energy sector: job profiles where women have been traditionally under-represented. In general, many job profiles requested by companies operating in the renewable energy sector are mainly vocational ones, and reflect gender segregation patterns, with clear prevalence of young women in general courses and men in vocational streams. Empirical research on renewable energy sector shows that in a typical renewable energy industry, only 6% line staff is female, while women workers represent 50% of the administration (F. Starace, *Energie Rinnovabili: il quadro di riferimento e l’esperienza di Enel Green Power*, in *Green jobs: new opportunities or new risks for female employment?*, Slide presented at the conference *Green jobs: nuove opportunità o nuovi rischi per l’occupazione femminile?*, annex to R. Gospodinova, J. Hajdú e L. Rustico (eds.), *Green jobs: nuove opportunità o nuovi rischi?*, Adapt Dossier, 25th February 2010, n. 4).

Yet, wide opportunities may

Education and training are a major lever for women employability in green jobs

open up for women in high level profiles, such as managerial positions and other better-paid jobs. By the way, a straight conclusion about green jobs ‘pink potential’ cannot be drawn, since much depends on the gender equality culture of each country’s labour market and on many other cultural and social variables. In fact, taking managerial position as an example, one might argue women are going to have more employment opportunities, being female population on average more qualified than men. Yet, it is widely acknowledged that women’s high potential in terms of qualifications and high-level skills and competences has not been fully reflected in their employment outcomes. In fact, even if the gender gap in employment rates is lower among women and men having a tertiary education (compared to women and men having a lower level of education), gender gaps follow a life-cycle pattern, with the level of education having a limited influence, as showed by employment rates by family conditions and age group.

Qualifications and jobs: diverging patterns for women in Europe

Anyway, retaining the right skills and qualification, proper education choices and adequate training represent a major lever for women to increase their chances to grasp green jobs opportunities. Once again, this significantly depends upon cultural factors to be attributed both to a company’s equality culture and women willingness to engage in non-traditional

educative and professional careers. What is sure, is that the occupational and sectoral segregation of women in the labour market, potentially turning into unequal distribution in certain occupational sectors – typically over-representation in some law-paid jobs and under-representation in other private sectors – is directly connected to female segregation in the education and choice of study field.

This is why an analysis of women educational and training performances and choices is appropriate in trying to analyze their chances in green jobs. As it is widely acknowledged, women outperform men in higher education qualifications, especially at the tertiary level.

According to the Unesco’s 2009 Global Education Digest, the number of women enrolled in tertiary institutions grew almost twice as fast as that of men in recent decades. While the number of male students quadrupled from 17.7 to 75.1 million between 1970 and 2007, the number of female students rose sixfold from 10.8 to 77.4 million. Research highlights a very positive trend in female participation in higher education, with women outnumbering men in worldwide university enrolments and graduation rates in 75 of 98 countries (Unesco, Institute for Statistics, *Global Education Digest: Comparing Education Statistics Across The World*, 2009). When it comes to tertiary education – type A in Isced classification – in 2007 women recorded 47% graduation rate while men only 31%. The gender gap is more than 25 percentage points in Finland,

Norway, Poland and Sweden and nearly 50 percentage points in Iceland (OECD, *Education at a Glance*, 2009).

Despite these very positive quantitative results, qualitative gender-related issues have a relevant impact on women careers and employment opportunities. It is important to examine the choices of study field by male and female students during the years of school and university, as they provide an insight into what skills and competences male and female labour force will offer to the labour market, and whether and how the study area might affect future career and family income patterns. Typically, women choose social sciences and humanities while they seem far less prone to choose natural

Dossier Adapt

To know more:

n. 9/2010

Social dialogue, renewable energy, female employment

edited by Giulia Rossi, Selma Terzimehic

n. 4/2010

Green jobs: nuove opportunità o nuovi rischi?

edited by Radosveta Gospodinova, József Hajdú and Lisa Rustico

n. 2/2010

The economic and occupational impact of green economy

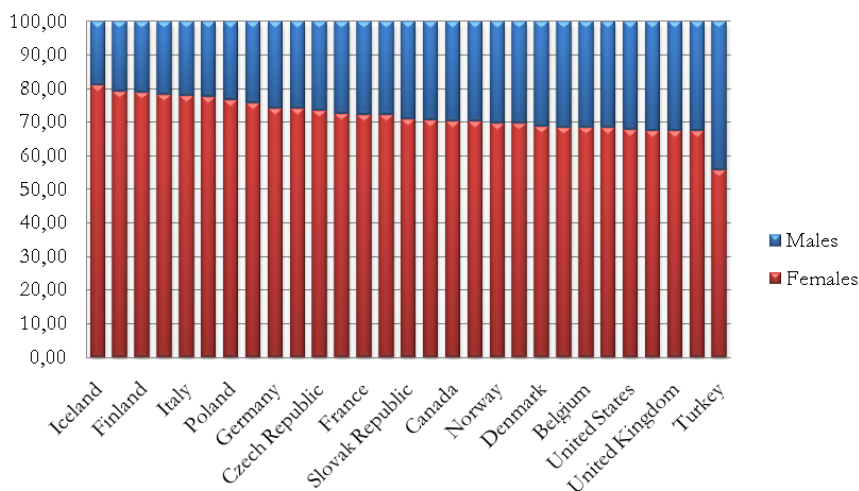
edited by Giulia Rossi

n. 9/2009

The impact of green investments on labour market

edited by Carlo Stagnaro

Chart 1: Percentage of university graduates (Tertiary - type A and advance research programmes) awarded Education, Humanities and arts qualifications, by gender (2007)



Source - OECD.Stat, 2007

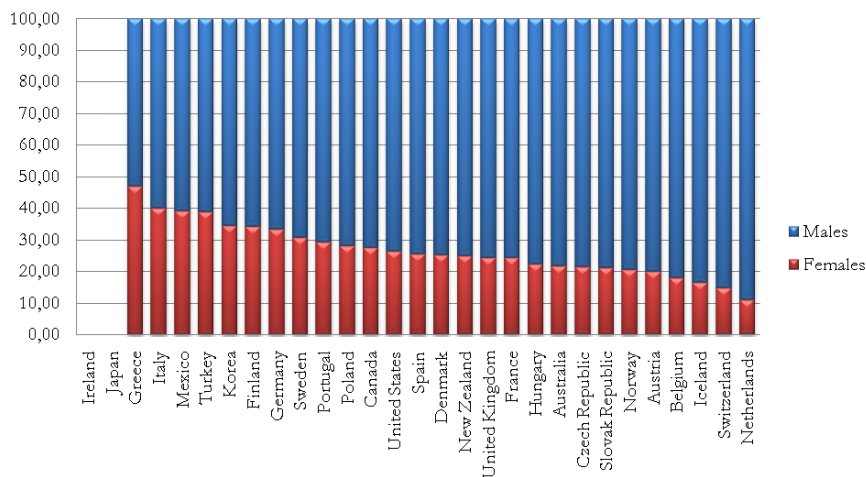
sciences, mathematics and technology faculties. If we take a look into data on male and female participation rates in different fields of study, in some OECD countries, gender segregation is quite evident. Data confirm that in 2007 in most countries women predominately graduated in humanities, art and education subjects (Chart 1). Percentages of female participation in this field reach approximately 80% in European countries, such as Iceland, Greece and Finland. Included within this category are courses in teacher training and education science, fine arts, performing arts, graphic and audio-visual arts e.g. drawing, photography, foreign languages and cultures, linguistics and literature, history and archaeology. Some prospective careers stemming from these degrees would include school teachers, interpreters and archaeologists.

Conversely, data on graduates in Mathematics, statistics and computing by gender (Chart 2) reveal that female students are under-represented in

mathematics and computing, a field which includes mathematics, statistics, actuarial science, computer programming, data processing, networks, software development.

Prospective careers would be found in hi-tech, the financial sector and insurance. Likewise, male graduates did also dominate in engineering, manufacturing and construction (Chart 3). This is the field that encompasses a diverse range of subjects and thereby offers multiple job

Chart 2: Percentage of university graduates (Tertiary - type A and advance research programmes) awarded Mathematics, statistics and computing, by gender (2007)

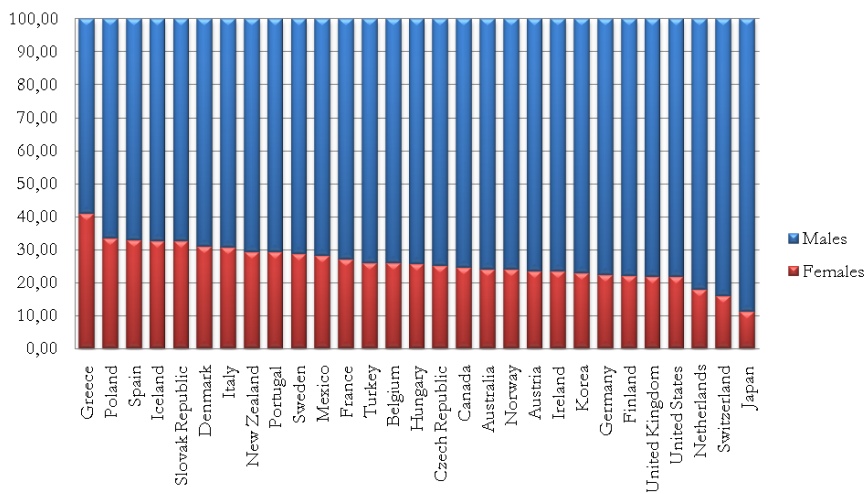


Source - OECD.Stat, 2007

opportunities. Students study a range of courses including telecommunications, energy and chemical engineering, food and drink processing, mining and extraction, architecture and construction, civil engineering. On average, female graduates in 2007 accounted for only 25.98% of all graduates in these subjects: this data is less than 1 percentage point higher than the one calculated for 2004 (OECD, CO3.2: Gender differences in university graduates by fields of study, 2006, www.oecd.org/dataoecd/56/58/37864173.pdf).

Analyzing the geographical distribution of female graduates in these subjects it emerges that Southern European countries are among those recording higher share of female graduates in the so called ‘hard sciences’: Greece, Spain and Italy rank among those countries with levels higher than the OECD average, or they overpass countries such as France, Germany and the UK. Bearing in mind data on female employment, in some countries women higher education levels, regardless of the study field, do not reflect at all into increased

Chart 3: Percentage of university graduates (Tertiary - type A and advance research programmes) awarded Engineering, manufacturing and construction, by gender (2007)



Source - OECD.Stat, 2007

job opportunities. This anomaly informs about bad labour market functioning, where labour supply and demand do not fluently match. Therefore, both in green economic sectors and in general, gender balance can be pursued first of all through fluid and flexible labour markets, where demand and supply do not mechanically match but they dynamically interact in order to place a person into a workplace, coherent with their skills, wishes, attitudes, education and training backgrounds.

The choice of study field seems to be influenced by stereotypes – impacting also on the labour market functioning – and it is not always supported by data on female performances in hard sciences (OECD – PISA studies tackle these concerns). Among the others, one of the five Lisbon benchmarks for education and training 2010 Work Programme – namely the total number of MST (mathematics, science, technology) graduates in the EU should increase by at least 15% and gender imbalance should

decrease – addresses this kind of concerns (European Commission, *Progress towards the Lisbon objectives in education and training. Indicators and benchmarks 2009*, SEC(2009) 1616 final, 2009). Although nowadays the share of graduated women outnumbers male graduates, men predominate when considering only graduates in MST. Despite policy efforts to encourage women in these sectors, the female share of MST graduates has increased only 1.2 percentage points between 2000 and 2007. The highest shares of female MST graduates are registered in Greece and Romania (over 40%), while the lowest proportions were in Czech Republic, Germany, France, Netherlands, Austria, Slovenia and Finland (less than 30%). When considering the specific field of engineering, in 2007 on average in the EU-27 only 18.4% of graduates were female. Gender imbalance is also pronounced in computing (19%) and to a lesser extent in architecture and building (36%).

The case of engineering is peculiar and it has been addressed by a number of studies examining why female are under-represented in this field.

Stretching the field from university to school and vocational education and training, in the all EU countries face the challenge of promoting a new culture that encourages women to choose the scientific and technical fields of education, enlarging in this way their opportunities for more and better jobs, potentially also in green economy. That is why one of the benchmarks of the European Commission is also the increase of female participation to the MST fields (Mathematics, Science and Technology) that is still relatively chosen by women, as it has been demonstrated.

Considering data on participation to Initial Vocational Training (IVT) in Europe, as well as those on Continuing Vocational Trainings (CVT), participation of both males and females is very low in all European Union's countries. For IVT programs in general, the European average is 5.3% participants to both men and women employed in all enterprises. Still, rates vary from one country to another: from less than 5% for both male and female participants in most countries and a slightly higher percentage in Germany and Austria (5.5% female and 5.3% male, and 5.8% female and 7.1% male participation, respectively) to much higher average in United Kingdom (19.3 female and 17.9% male participation). When it comes to CVT courses, European Union's average is higher for male (34% of employees in all enterprises) than

for female participants (31%). Also here exist different geographical distribution, as in some countries there are more women frequenting CVT programs (Denmark, Estonia, Ireland, Greece, Spain, Slovenia, Finland, UK).

Considering the general European Union's situation in lifelong learning activities, male participants (42.8%) are more numerous than the female ones (41.1%) with deep differences among countries. Still, these data are referring to a very wide group of programs and cannot be used to make conclusions on gender segregation in IVET, CVET and LLL in specific renewable energy sector.

In general, being most job profiles requested by companies operating in the renewable energy sector mainly vocational profiles, there is high potential for relevant gender segregation, given a clear prevalence of young women in general courses and men in vocational streams. One of the solutions could be increasing female participation to Vocational Education and Training (VET), as it plays an important role in providing the skills, knowledge and competences needed in the labour market. Not only vocational education and training, but most and foremost lifelong learning activities, could partially contribute to solve the forecasted problem of skill shortages in renewable energy sector, in order to help labour demand to meet more appropriately the labour supply. This is especially true if we consider the need for vocational training and education certificates requested for certain

job profiles and in general how the occupational structure is going to change up to 2020. The problematic issue is also here the gender gap in participating to the organized programmes. As the report on *Indicators and benchmarks for 2009*, provided by European Commission demonstrates, different groups of adults do not equally attend the lifelong learning activities. Women make part of the disadvantaged group, as they show lower participation in formal and informal education. Some obstacles to the female participation can be found in issues such as:

- family responsibilities (the most part of women that faced difficulties in participation to educational or training programs recognized the burden of family care as a main obstacle.);
- conflicting work schedules (lack of flexibility in organizing personal time and working time);
- the cost of courses – too expensive (especially in Eastern Europe and Baltic countries);
- the lack of employer support or the absence of facilities at reachable distance (less relevant).

Renewable energy sector: what about women?

Although women in last years have been obtaining higher qualifications than men in all universities worldwide, the main problem remains their choice of the field of study, as already discussed. The outcomes of various researches on the subject

of educational segregation among boys and girls in most countries are very similar, showing a very high participation of women in the social sciences and humanities on one hand, and a very low female participation in the field of natural sciences, mathematics and technology (MST) on the other hand. This could be a very serious obstacle for female participation in the renewable energy sector, as the most job profiles require a degree in Engineering with a further specialization in environmental and energetic (including renewable) issues, especially in Business Development. The research conducted by IRES and Filctem CGIL identified following phases in the chain value of renewable energy: research and development; manufacturing; project development (engineering, design & project management) and commercialization (sales and marketing); authorization procedures; financing; installation; operating and maintenance (IRES, Filctem CGIL; *Verso la green economy: Lotta ai cambiamenti climatici e fonti rinnovabili: Gli Investimenti, le Ricadute Occupazionali, le Nuove Professionalità*, 2010). The research added regulation, trading and green certificates and smart grid as additional important phases.

When it comes to Business Development, this part of the value chain is characterized by the relevant presence of managerial positions, which require a very wide range of required skills and competences. As a recent study highlights, in renewable energy sector, as well

as in other ‘green’ sectors, “managers have to focus on quickly picking up new trends, explore new markets and channels, invest in customer relations and optimize their processes and finance to reduce costs” (A. Gelderblom, J. M. de Jong, F. van der Zee, G. Gijbers, J. Vroegop, M. Roso, M. Collewet, E. Dijkgraaf, D. Maier, *Investing in the Future of Jobs and Skills Scenarios: Implications and options in anticipation of future skills and knowledge needs, Sector Report: Electricity, Gas, Water and Waste*, May 2009). Because of the more intensive competition and further liberalization, finance skills and regulatory knowledge, especially in always stricter and changing environmental regulations, will be essential. These profiles require also social skills, such as communication and networking, in order to make new solutions possible, to develop and implement sustainable technologies and to find new co-operation partners, in the same way in which

language and intercultural skills become of a relevant importance, as firms operate more intensively on an international scale. Renewable energy sector is very rapid and in constant progress. Therefore problem-solving skills like creativity and initiative and self-, stress- and time management skills like flexibility are frequently requested. Women could find it difficult to adapt to such requirements or they could find it easier, given their adaptability skills and their ability to complexity manage, generally developed in coping with work life balance challenges. Moreover, it has been demonstrated that women adapt to change more easily than men (C. Panatta, M.T. Romita (eds.), *Gender diversity e strategie manageriali per la valorizzazione delle differenze. Interviste HRC Academy a donne -manager di successo*, Franco Angeli, Milano, 2009). When it comes to engineers, which is another extremely requested professional profile in renewable energy sector,

knowledge, technical, environmental, electrical and mechatronic skills are essential, but also social, problem-solving and self-management skills. The main problem for women referring to these jobs is an extremely low female quote of graduates in engineering. Anyway, data at this aggregation level are not sufficient to draw any conclusion, since it would be necessary to question which engineering curriculum women choose and which instead continue to be preferred by males.

A slightly more gender-balanced situation regards staff profiles, as this field offers numerous positions for Economics and Law graduates, where women are well represented in Europe. Yet, among staff members, IT experts are highly required and this is another typically male-dominated profile, though differences are deep among countries.

Another request frequently mentioned in offers of green jobs is also job experience in the field

What are ‘green skills’?

The definition of ‘green skills’ is not agreed upon amongst experts, and this is partly due to the lack of consensus on the definitions of ‘green jobs’ and ‘green sectors’. Since green jobs’ definition is far from being widely shared, also green curricula and relative learning outcomes, which are the educational answer to labour market needs, do not find a commonly agreed definition. From a demand-side perspective, existing literature struggles against two definitions of ‘green skills’: on the one hand, some experts (OECD) state that such skills are simply traditional qualifications and skills applied to environmental issues; whilst other scholars maintain that the green industry requires new skills, still to be developed. This does not only mean that new curricula have to be designed in order to fulfil the content requirements of specific occupations: «Knowledge of sustainable materials [...], ‘carbon foot printing’ skills, environmental impact assessment skills (flora, fauna), good grasp of the ‘sound’ science. Yet, green skills are most of all transversal skills, such as: strategic/leadership skills, adaptability/transferability skills, systems analysis [...], holistic approaches, risk analysis, co-ordination skills and entrepreneurship» (CEDEFOP, *Greece. Future skill needs for the green economy*, Thessaloniki, 6-7 October 2008). Business cases and several reports do also state that green skills are greened traditional skills, mixing with different knowledge fields and abilities. Green jobs indeed are going to require interdisciplinary job profiles, able to combine competences from different sectors in a creative way.

or in similar ones (it is the case of construction workers retrained to work in renewables), which could definitely be another obstacle for female participation. Such consideration somehow intertwines with green skills' characteristic of being mainly traditional – although greened – skills, at least until technology changes (see *What are 'green skills'?*, in this *Dossier*, p. 7). Therefore, if knowledge, skills and competences are those traditionally required by the energetic industry with specific regard to electricity, those workers who have been traditionally hired by companies operating in the sector are likely to be potential candidates for new job opportunities.

Considering also the frequently requested availability to transfer, or in some cases frequent shift works (with on-call works outside normal working hours), women may find additional



difficulties in conciliating work-family life, in particular the childcare. The same problem of double care-burden is evident in assigning challenging projects, the cases in which often employers avoid giving the responsibilities to the mothers in order to avoid burdening them. Also a male dominated workplace may obstacle women in addressing themselves to this field: they may feel sense of isolation and non-acceptance (see S. Piazza, *Psycho-social issues of women in "non-traditional" jobs*, in this *Dossier*, p. 20). Job offers often mention ability to work in teams, but this can gain a negative connotation for a woman, if she finds herself working without any female colleague.

Although many studies register that renewable energy sector will potentially create further occupation and more and better jobs, it is also true that women might address a number of obstacles in accessing and working in this sector. Gender segregation in choice of field of study, atypical working hours, need for transferability, strong male-dominated climate in the sector are only some of the risks to be faced in order to provide for an equal participation of women in the European green economy. Some of the recommendation which could potentially have a gender mainstreaming approach, would be training employed workers, changing the work organization (including network collaboration and mergers), designing and offering new courses (continuing vocational education and training), providing information about jobs and (emerging) skills:

career guidance and updating job profiles regularly.

The role of social dialogue

Coherently with law effectiveness and certainty, subsidiarity principle should lead the implementation of public policies for easing women access to renewable energy sector and improving their working conditions. Involving and emphasizing the role of social parts, industrial relations and labour market stakeholders is the major approach that WiRES project adopts and promotes. In order to accompany and orientate economic transformation and restructuring processes, social parts need to be involved in negotiations and local bargaining processes in order to encourage a just transition, also with regard to gender balance. Here follows a short list of possible policy areas and measures where trade unions and employers' associations are called to cooperate:

- 1) *Skill and training needs analysis and forecasting*: enhancing Human Capital can only happen where the needs of the individuals have been thoroughly evaluated. Thanks to such an evaluation, it will be possible to act in a more direct and effective way on the motivational drives and to answer adequately to the demand of satisfying such needs. Working on territories, close to productive processes, in contact with companies and workers, social parts can collect, express and elaborate skill needs, which is the starting point to be necessary tackled to innovate education and training and to

elaborate new training policies for all workers, including women;

2) *Training provision*: besides formal and traditional educational agencies, social parts can create or expand appropriate training programmes, provide training courses or build networks at the local level with business, education providers, employment agencies in order to disseminate information, open up opportunities, raise awareness around emerging green markets. Workers and employers associations could work with schools and universities, public and private career counsellors and local programmes focused on non-traditional employment training in order to inform women about the emerging opportunities;

3) *Information and support*: social dialogue can provide for consultancy to unemployed women who are trying to enter the labour market. Bilateral bodies can open up counselling and orientation centres to accompany women to enter companies operating in green sector; to inform about educational opportunities; to support their voices in advancing specific requests. They could provide for psychological support to face a gender imbalances workplace: American experiences show that working in a male dominated environment requires a woman to be adequately equipped not only with knowledge, working dictionary, but also with psychological readiness to face potential discriminating praxis. Support is even more important,

considering women being exposed to high risk of work related stress.

4) *Placement*: social parts could enable the assistance to employers in recruiting, training, retaining and promoting women's entry into identified occupations. They could offer placement service, not as an employment agency would do, but promoting a real integration between women's (education, expectations, work-life balance, career, etc.) and companies' needs. Managing the 'worker's life-cycle' becomes a crucial challenge to answer green economy's opportunities: the new challenge is to harmonize company's demands and individual expectations – however changeable over one's professional path they can be – while seizing the opportunities offered by new markets. This is an inescapable guideline for all those services directed to the

evaluation and professional training that – pursuing personnel management and empowerment – produce positive effects both on the company's objectives of efficiency and the people's satisfaction.

5) *Access to the labour market*: social parts could play a role in designing and implementing strategies and programs to surmount the barriers to female participation to the labour market, given specific features of green jobs sectors and considering the local development, social and economic model.

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Trade unions for women in green economy

by Liliana Ocmin

The 'green transformation' of the economy can represent a fundamental strategy for getting out of the crisis we are currently experiencing and is an innovative exit strategy that focuses on development and that is committed to seeking out new ways and new solutions. This may appear to us as paradoxical or provocative at a time when the very existence of Europe's single currency is on the line and when billions upon billions of euro are being taken

from growth and development policies on a daily basis to burn on the altar of finance. In reality, it is precisely at these moments of greatest difficulty that we need to innovate and experiment with new dimensions and new opportunities for the economy. When consumer goods and services reach 'exaggerated' levels of environmental impact, the converting of production choices becomes a must by necessity, and this is something that both consumers and industry

itself are fully aware of. There has been talk recently, for example, about building cars from totally recycled materials and likewise for furnishings and electrical appliances.

The so-called 'green economy' therefore, allows us not just to think along new lines in terms of reorganising the economy but to set in motion a veritable redirecting of society, of the economy and of labour towards an ever increasing sustainability. The idea of sustainable development, an awareness of the limit in the relationship with environmental balances, the preservation of virtuous relations between development and nature represent so many elements of an innovative culture, with a meeting of thoughts, sensitivities and everyday lives of women.

In this respect it is possible to give the green economy and green jobs a strong feminine imprint and this is most certainly an opportunity to be seized but where it is necessary to be 'vigilant' in order to avoid the risk that it does not result in yet another chapter of discrimination against women.

This is the basic reasoning behind the creation of a movement of reflections and actions geared towards gaining an understanding of whether 'green' jobs can truly represent credible and effective opportunities for women and if such employment opportunities will be equally shared with men.

It will not be sufficient to ascertain whether – through a green economy – there will be an actual creation of additional female employment or alternatively whether it will just result in new jobs that will

simply replace those lost in other sectors.

What is required instead is the concentration of efforts to guarantee equal conditions of access to the green economy for women. This is a process that needs to be controlled and directed because it will not just have to cope with recurrent gender prejudices but also with certain structural data that complicate access.

First and foremost, we will need to get over the idea or prejudice according to which, for example, the world of electricity, energy and environmental protection, with its large scale tendencies and centrality of systems must, by necessity, be a predominantly male sector.

To go beyond the prejudice and the naked sector realities also requires the singling-out of tools that are appropriate and efficient. It is above all a case of developing a strong cultural action that will transform the sector's perception and by strengthening equal opportunity policies, consolidate access for women.

This objective must also, but principally, be linked with a reflection on the method. As a trades union, we maintain that the main avenue to be pursued should be that of social dialogue, which is one of the most important and innovative participatory methods for the European Union's social policies.

By initiating close collaboration with trades unions, business organisations and public institutions, it will be possible to establish common scenarios; grasp the global picture for opportunities and threats

associated with the green economy; study the measures geared towards women's access and put in place the key elements for a governance that, through this new sector of production, will have a global impact on the profile of the world society.

When discussing the transition towards a green economy, as we said before, it is impossible not to do so without bearing in mind that the sectors, in which the greatest changes are envisaged, in terms of new jobs, are those in which women are under-represented, in particular in the world of construction, transport and energy.

It is for these reasons that the social dialogue can become a tool that harmonises, that corrects congenital defects and that creates preferential avenues for women. The feminization of the economy is not a luxury or an ideological category that is removed from society's needs.

It is instead an imperative of our times, a fundamental step in constructing a more lively and cohesive society and a primary interest that is present and widespread.

It is not possible, therefore, to leave the market to its own devices and its own often perverse dynamics, but it is necessary to reconcile different interests and visions and prevent conflict situations. Said process, that is fundamentally one of reconciliation, social dialogue and involvement of the social partners constitute the most suitable tools for defending and promoting rights, representing interests, supplying specialist skills and ensuring that economic-social objectives are achieved.

As the International Labor

Organization states: “The main goal of social dialogue itself is to promote consensus building and democratic involvement among the main stakeholders in the world of work. Successful social dialogue structures and processes have the potential to resolve important economic and social issues, encourage good governance, advance social and industrial peace and stability and boost economic progress”.

When we reflect on social dialogue, intended as the tool for promoting women in the system of the green economy, we must also read in between the lines and see the limitations of a concept that risks being shattered into pieces in a ‘national’ logic.

The green economy is in fact an economic sector that is very powerfully supranational and presupposes huge investments, network synergies and geopolitical relationships. The risk is that of obtaining a reply that is for the most part national, conditioned by the heterogeneousness of individual national systems of dialogue. It is

important therefore, to put in place social dialogues that are consistent with the predicted size of the green economy.

But the topic of consistency, of participating systems and of social dialogue with reference to the green economy, reveals at least two other elements that are of great importance both generally speaking and for women.

The first concerns the managing of migration from one sector to another. The green economy is increasingly characterised as being a sector that is highly attractive and that has a great potential for absorbing labour.

This will result in a ‘sponge-like effect’ and the movement of labour from those sectors in crisis. It is an exodus that should be managed and controlled through sharing because it can result in a funnel effect that complicates all the access processes, in particular those for women.

In this respect it will be necessary to develop preliminary training, professional

requalification and orientation designed to favour the access of women to the green economy. To do this will require substantial investments and a common vision by social partners, governments and supranational institutions.

The other element is that of orientation being used as a tool for social dialogue and therefore the growth of the green economy. If we analyze the crisis within entire sectors, within historical areas of production and the cascade effect resulting from this, we realise how social partners struggle to comprehend the problems of relocating workers and what or how many the cultural difficulties are that are encountered in tackling the issue of a new professional allocation of a surplus of human resources.

This means that when they are faced with a crisis in one sector, social partners must take on board the workers whose jobs are at risk, examining the opportunities for the relocation, the professional skills available, the occupational capacity for absorption of specific sectors such as the green economy and the opportunities to be exploited by working concretely on policies of orientation.

At the heart of this virtuous mechanism, that constitutes the other face of social dialogue, lies a new vision of the role of social partners who must focus on monitoring and preventing crisis scenarios, rather than pursue the classic ‘later down the line’ type of intervention. This active role of analysis and preliminary evaluation also brings with it a new vision of employment and a specialisation of the social



partners who must increasingly understand and interpret the reality.

This, in our view, is the boundary of relations and relationships that is to be mapped out if we truly want the green economy to become an opportunity for women, rather than just another wasted opportunity.

The *Italian Confederation of Workers Trades Unions* (CISL) is in this respect committed to supporting a project for the creation of a school of higher education for the green economy,

promoted by the *Association for International and Comparative Studies in Labour Law and Industrial Relations* (Adapt) and the *Federation of Workers in Italian Electrical Business* (Flaei). The school, through its educational and scientific research activities, will further the spread of sector case studies, promoting the constitution of consortia, and associations having the same objectives. These targeted programmes will also be a preliminary to the inclusion of highly qualified personnel within the production

sector. The actions will in particular focus on training, orientation and the incentivising of innovative projects in support of the expansion of the green job sector. These actions, that will include work training, will also be of support to the requalification and relocation of personnel from other sectors excluded from company restructuring or changeover processes.

Liliana Ocmin

Trade Union Confederation Secretary
Cisl

Good practices from Bulgaria in renewable energy sector

by *Emil Rogov*

As an example of good partnership and cooperation, the presentation from Bulgarian side at the second WiRES workshop, held in Karlsruhe on the last 27th and 28th of May as part of the International conference on human capital for sustainable economies, was prepared from Mrs. Emilia Markova and Emil Rogov. The latter was representing the Union for Private Economic Enterprise (UPEE) – one of the six nationally recognized employers' organizations in Bulgaria – while the former, Mrs. Markova, represented one of the two nationally recognized trade unions – Confederation of Independent Trade Unions in Bulgaria (CITUB). The two organizations together participate in the Bulgarian National Council for Tripartite Cooperation and in many

regional and sectoral forms and structures of social dialogue activities.

In UPEE-CITUB presentation the current situation in the renewable energy sector in Bulgaria was presented and also the role of the social dialogue as an instrument for regulation and for support of its development.

As the latest statistic data from the National Social Security Institute indicates, Bulgaria is different from more of the European countries, because the country doesn't have problems with women's employment or unemployment rate. At the beginning of 2010 there were about 117,000 jobless women, which is just 7.4% unemployment rate. Of course, there is a bad exception regarding young ladies: over 17% of women up to 24 years old are unemployed. On the other

hand, the impact of the financial and economic crisis has affected women's employment rate, which has fallen by 2.4% during last year.

What about the situation especially in the renewable energy sector? At the beginning of 2009 there were about 6,000 employees involved and 1,500 of them were women. At the beginning of 2010 there were a total of 5,500 employees and about 1,400 of them were women. So, the bad news is that less people are working now in this sector, and the good is that women's participation remains to be stable around 26%.

If we sum up the research's results to draw some conclusions, with less than 6,000 employees Bulgaria is just starting to develop the renewable energy sector. But there are many starting and ongoing

construction projects and the expectations are that till the end of 2012 the sector will be 4 to 5 times bigger.

The development of the renewable energy sector leads to the need of social dialogue activities to be held, in order to help its sustainable growth and in order to regulate the relations between employers and employees and women's role in

particular. The permanent use of social dialogue instruments and methods can ensure women's privileges and can directly affect on their motivation for work.

One Bulgarian example: every year the employers' organizations and trade unions are negotiating and setting a minimum range of social security taxes for different sectors and occupations. The levels in the energy sector are among the highest and this directly reflects in high level of the average monthly salary.

In addition, in collective labor agreements there are many articles, which secure better work conditions and which can make the energy sector much more attractive to women, such as:

- hardened protection of less presented gender;
- measures for decrease of conflicts between professional and family life;
- additional social acquisitions.

To frame renewable energy sector experience, some words about the social dialogue system

and structures in the energy sector in Bulgaria might help.

First of all, we have a Sectoral council for partnership, which is a tripartite structure and it discusses and approves the main decisions. It

Social dialogue can ensure women's privileges and enhance their motivation for work in renewable energy sector

includes representatives of the Ministry of Economics, Energy and Tourism, the Chamber of energy producers and three sectoral organizations from the trade unions.

The bipartite body includes representatives of employers and employees, which negotiate on energy prices, ways of restructuring and renovation, salaries etc.

The regional cooperation and partnership is based on joint actions as workshops on specific topics and regular meetings for dealing with upcoming problems. There are similar activities, organized at all these levels, whose main goals are to support the social and working inclusion of women, to motivate them to be active participants in the labor market and to stimulate them for more quality at work. As an example:

- Training for knowledge and carrier development and training on equality problems;
- Stimulation of debates;
- Exchange of good practices;
- Information and consulting procedures;
- Organization of free receptions – f.e. on labor legislation problems;
- Conduction of thematic and information days;
- Cooperation and partnership

in the field of Health and Safety at Work.

What do we achieve, using these structures and these forms and instruments of social dialogue? There are some examples from collective labor contracts in energy sector, directly related to the women employment:

- Flexible forms of employment and flexibility of working time – especially for mothers with small kids and for those women, who continue their education and training;
- Fast integration of women after a long maternity leave;
- No discrimination on the working place;
- Better conditions for leave.

Coming to wages, the main principle 'equal work = equal wages' is guaranteed by the collective labor contract, as well as by the Bulgarian Labor Code. The minimum salary in energy sector is set on at least 50% above the minimum salary in the country, and there are still negotiations for growing. In addition, another employers' responsibility is to pay for voluntary pension fund and for health and life insurance of their employees.

Here are some examples of measures, which can be implemented in companies by collective labor contracts or just based on employers' social responsible behavior:

- Commercial and public services on working place;
- Canteens;
- Transport services;
- Holydays. Sports and tourism;
- Medical care;

To know more:

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Green Economy and Female Employment. More and Better Jobs?

edited by Francesca Mattioli

- Social assistance;
- Support and care for kindergartens, schools, universities (scholarships, practices, etc.);
- Other innovative financial and non-financial solutions.

UPEE plans to organize some interviews and researches in order to find out which types of measures can attract women and can increase their number in the renewable energy sector, or to make their work and life better.

As a part of UPEE contribution to the WiRES project activities,

Emil Rogov

WiRES Coordinator for UPEE

Legal Perspective of Employment in Renewable Energy Sector

by *Balasz Rossu*

Starting Thoughts

As more and more time is spent on conducting researches and designing different action plans to solve our long-lasting problems, caused by damaging our environment, we keep bumping into the same problems again and again. The basis of these problems is that in most cases people do not really intend to make as big a sacrifice which would be needed to counter the consequences caused by our wasteful lifestyles so far. People in general would only take actions that are inevitable, but with such an attitude instead of solving our problems we are merely prolonging them.

The idea of a *green economy* sounds like a possible solution and most people who come across the term seem to like the idea. According to recent (and also not so recent) studies, the general attitude of people towards the question of greening our lives in the future is almost a hundred percent positive. That is a great start, but unfortunately it

is almost as far as it goes. Whenever the questions go into more detail, such as the amount of money and time that should be spent on making the steps required to go from planning to actually change our ways of life, the number of supporters drop drastically. Nearly everyone is aware of the problems we are facing and agrees on the fact that we need to change, yet the will to act seems to disappear somehow as soon as it comes to making 'sacrifices'. This might sound a little too simplified, but this just seems to be the matter at hand; Is there no method to *make* people contribute to the community? There is. And it is to create law. Of course the solution is far from being so simple, but it is true that we need some sort of legal regulation, but to get even started on that, we need to lay down the basics. The first question that might arise is no other than: *'What are Green jobs?'* On first thought it would seem easy to answer that question, but this is exactly the thing that leads us to the problem we are facing in our

current situation. Every nation, legislative body, institution or even study groups and experts have created their own definition for green jobs, or green collar jobs. The range of variations is so wide that I do not even try to list all of them, there is no need to do so either, but just to make it possible to vision the diversity, let there be a few examples. According an electric company, "green jobs are the ones that produce energy from renewable sources, such as wind, water, solar, geo-thermal and biogas". This definition does point out something important, namely that the future lies in the use of renewable, but is that really all there is to green jobs? An internet encyclopedia focuses on an alternate parameter: "Green jobs are done by the workers employed in the agricultural sector or in the environmental sectors of the economy". I am not hinting that this definition would not be correct, but according to it, each and every kind of work that is done outdoors is done *for* nature, but

unfortunately that is not the case. As a last example let us see an alternate perspective, a role-based definition, which says: "Special blue collar jobs that help protect our planet are called Green collar jobs, or simply green jobs". This definition also has some interesting thoughts but also carries its own flaws. Is it really impossible for someone who is not doing manual labour to do something to save (or at least not further damage) his or her environment? I certainly hope not, (because that would mean that listing all this information was meaningless). There does not seem to be an agreement among experts regarding the above-mentioned issues at the moment, although there is something that they do all see the same way, and that is the need to change. We do need to change to renewable energies, green jobs and a less lavish way of life. We cannot deny the facts that we have done some serious damage to our environment and also that we are running low on our natural resources which we took for granted for far too long. The time of waiting for these problems to solve themselves is up, because if we are planning to have a future on this planet, we call Earth, we should not hesitate to act.

Historical Summary of the Legal Perspective

As it has been mentioned, the time to act has arrived and although importance of the issues in question is non-disputed, to make steps which are worth our effort we need to know what are the legal means that are already



there to support us from the background. We should also make sure to get the people to join our cause instead of discourage them right at the start. This is why we should put special emphasis on the employment of women as they are only a mere ten to fifteen percent of these sectors' workforce. I am not saying that we should get this new sector full of women, but we must make it possible for them to join on equal grounds, instead of creating yet another field to support discrimination. To further express the importance of this issue I will mention a short chronology of the different steps and actions taken by the EU.

On 20th November 1996, the Commission issued a green paper on renewable sources of energy. Being a green paper it did not exceed the 'power' of a proposal, or a national government report. On its own it had no real commitment to action, but it is of great importance as it opened the debate on the most urgent and important measures at hand. The paper didn't mention any deadlines or levels with quantitative data that should be achieved, instead it was based on

the data of researches and surveys and so it could gather the positive and negative sides of the question.

According to the green paper the advantages of using renewable sources of energy are as follows:

- in line with the overall strategy of sustainable development;
- helps reduce the European Union's dependence on energy imports and hence ensure security of supplies;
- helps improve the overall competitiveness of European industry;
- has a positive impact on regional development and employment;
- is favoured by the general public.

The paper however went into detail about the obstacles that hinder a more widespread use of renewable sources of energy. These include:

- high capital costs with long payback periods;
- the various players involved in decision-making affecting renewable sources of energy are unaware of their potential;
- general resistance to change;
- technical and economic problems affecting connection to

centralized electricity grids remain unsolved;

- difficulties linked to seasonal variations in certain energy sources (wind and solar);
- other energy sources (biofuels) require appropriate infrastructure.

The topic was greeted positively and so the green paper was soon followed by a white one. White papers are more like an authoritative report than a proposal. It is more like a guide that is addressed to a certain issue and contains possible solution for them to be solved. The Commission on 26th November 1997 issued the White Paper for a Community strategy and action plan which came up with a goal, namely to double the amount of energy produced using renewable sources (which was 6% back then) by the year 2010. For some countries this seemed impossible to achieve, but fortunately many things have changed since then. Many Action Plans were framed (e.g. the Biomass Action Plan in 2005) and many Funds were created to finance them (e.g. the Efficiency and Renewable Energy Fund in 2006). These were all important milestones, which lead to a key date that we are approaching fast. In March 2007 the EU summit issued a deadline for EU member states to cut down the emission of greenhouse gases by 20% and to further increase the amount of energy produced using renewable energies as sources, up to 20% of the total energy produced and used by the certain member state.

As I indicated not only hard law, but also Soft Law can have a

good amount of influence on our life to achieve and uphold sustainable development. After a brief historical overview of legal matters, but before the final conclusions an alternate, but just as important topic should be mentioned, which deals with equality between men and women on the labour market.

Mainstreaming Gender Equality

Combating discrimination is (and has been for long) a major challenge for the European Union. We must know that the Union is founded on the principles of liberty, democracy, respect for human rights and fundamental freedoms, as well as the rule of law. Hence the EU must take all measures necessary to combat discrimination of all kinds, notably as regards employment and the labour market. The focus is on creating better living and working standards for women and men by alleviating poverty, promoting human rights and fostering gender equality and equal opportunities for all.

For many years the focus of EU action in the field of non discrimination was on preventing discrimination on the grounds of nationality and sex (The European Commission refers to sex discrimination as 'gender' discrimination). In 1997, however, the Member States approved unanimously the Treaty of Amsterdam. Article 13 of this new Treaty granted the Community new powers to combat discrimination on the grounds of sex, racial or ethnic origin, religion or belief,

disability, age or sexual orientation. Since the Treaty of Amsterdam came into force in 1999, new EC laws, or Directives, that have been enacted in the area of antidiscrimination are the Racial Equality Directive, 2000/43/EC, and the Employment Equality Directive, 2000/78/EC.

We should however keep in mind that although many cases of discrimination have been identified in the field of employment and the labour market, not each and every case counts as discrimination. In some cases differences in treatment are authorised.

The first case is the case of *Genuine occupational qualifications*. In certain cases differences in treatment may be justified by the nature of the post or the conditions in which the job is performed.

The second case allows differences in treatment *on grounds of age*. Differences in treatment on grounds of age are permissible when they are objectively and reasonably justified by a legitimate labour market aim and are appropriate and necessary to the achievement of that aim (protection of young people and older workers, requirements as to the extent of job experience, etc.).

(I have not listed all the cases discussed by the above-mentioned directives just gave examples to show the complexity of the issue).

Although we have come a long way already, there still is a long way ahead of us. The general positive reaction to changes and the adoption of the new goals is encouraging, but we should work

together even harder (both on regional and community level) to achieve further progress. Even if the current situation seems chaotic because of the clash of different ideas and perspectives,

it all proves the fact that people all over the world are dealing with the subject. Using both hard law and soft law, or possibilities that are back up by law, such as social dialogue achieving our

goals could become possible and together we can make our life *green*.

Balazs Rossu

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Women in wind energy sector

by *Selma Terzimehic*

With its exponential growth during the last years, wind energy seems to become the mainstream power source of the European energy market. Since the end of the 1990s, the sector registered an extraordinary performance. According to the European Wind Energy Association (EWEA), only in 2009 there were more than 10 GW of wind power installed in Europe: more than in any other power generating technology. From 2000 to 2007, wind energy installations registered an enormous increase of 339% (EWEA, *Wind Energy Factsheets: By the European Wind Energy Association* 2010). Along with its productive potential, wind farms could bring considerable benefits in terms of local development by ensuring zero emission of CO₂ or of any other greenhouse gas or air pollutant: the lowest lifecycle emissions among energy technologies and no emission of harming carcinogenic particles. As an example of the sector's major players, Enel Green Power, the Italian leader in renewable energy sector, is maintaining its commitment to the environment, ensuring that the wind farms are in harmony with the surrounding areas, with

environmentally compatible layouts and boosting local communities (www.enelgreenpower.com).

VESTAS, the pioneer in eolic industry and technology and the leader in the Italian wind energy market, sustains that this source of energy is the most optimal and the cleanest way of reaching the energetic independence of economies worldwide (www.vestas.it).

On its way to meet the EU 2020 Strategy's targets on renewable energy sources, wind energy is somehow changing the European labour market equilibrium, generating new jobs and potentially increasing European employment rates. Although it is difficult to exactly quantify employment rates

in the sector – as there is no official classification in available statistic – the EWEA estimates that in last year (2009) there were about 192,000 people employed in the European wind sector. Moreover, EWEA expects that the strong growth in wind energy employment in Europe will continue in the

upcoming years, reaching 280,000 employees in the sector by 2015, and 450,000 by 2010. As emphasized by Christian Kjaer, EWEA Chief executive, during the debate organized by EWEA on the 10th of June 2010 in Brussels, 450 new European wind energy jobs per week will be created over the next decade. If in 2003 83% of this employment was concentrated in only three European countries, namely Denmark, Germany and Spain, today the wind energy sector is rapidly expanding its beneficial impacts also to the rest of Europe.

While governments are dealing with higher unemployment rates in all European countries, the wind industry needs more and adequately trained and qualified

people to fill the vacancies today and also for future jobs. Another report issued by the EWEA (EWEA, *Wind at Work, Wind Energy and Job Creation in the EU*, January 2009) handles these shortages as one of the crucial questions of wind energy's development. In the last couple of years, wind companies have

Low female workforce participation to the wind sector is already evident

been complaining about faced shortages of workers, especially those working in manufacturing and development activities. Some of the job profiles in the wind energy are common to other sectors of the economy, particularly to the power sector. Vacancies in this sector can be occasionally hard to fill; but they are usually less of a problem for wind companies, since the qualifications they require are less specialized. For example, such profiles refer to not-qualified and semi-qualified workers, such as secretaries, sales managers, drivers of light trucks etc. Conversely, the more problematic job profiles are those more specific to wind energy, which require a particular set of competences and play specific roles on the value chain. At the same time, these profiles also require a high degree of experience and responsibility. In particular, gaps are present among engineers, operations and maintenance (O&M) technicians, and site managers. Another

problematic profile is the project manager, who is responsible for getting the permits in the country where the wind farm is going to be installed. As this job profile requires a rare combination of specific knowledge of the country where the plant is settled, wind energy expertise and negotiating skills, companies in such a young sector as wind power generation, are facing difficulties in finding adequate candidates. The EWEA highlights the need for information on careers in the sector, offering numerous attractive opportunities for young generations, distributed at secondary school, before students decide which courses to take. Taking into account the disparity between skills required in different European countries and the trans-national marketplace in which the key-players of the sector operate,

EWEA suggests the eventual creation of EU-wide diplomas, in order to iron out the mentioned differences.

Very often graduates need additional specialization to work in wind energy, which is normally organized by the single company. EWEA suggests also job fairs, training centers and university employment offices as a good way to reach potential candidates, highlighting the importance of teachers training. Moreover, it has

been noticed that in the secondary education, range and quality of the courses dealing with wind-related activities are insufficient (EWEA, *Wind at Work, Wind Energy and Job Creation in the EU*, January 2009).

In addition to the main concerns and quantitative evaluations on employment creation potential in the wind industry, gender issues

Education, training and retraining should not exclude gender issues

WiRES

Women in Renewable Energy Sector

On line Internet Area

As a product of the WiRES project, Adapt has created an online cooperation area, freely accessible at <http://moodle.adapt.it> (login as a guest)

Besides being a working tool for the project partners, the online area collects all the deliverables produced for the project activities by the WiRES International Network



do also concern the sector's development, as well as the other renewable energy sectors. Whether male and female population will fairly benefit from the expected wind potential, it is still unknown. Anyway, green labour supply, as remarked by the ILO, should also be socially sustainable in terms of decent jobs, labour standards, working conditions and equity.

Although wind power production is a relatively young sector, low female workforce participation to the sector is quite evident. In the interview for Wind Directions Magazine (Chris Rose, *Where are the women in wind?* Wind Directions, April 2009), Amy Parsons, a conference manager at EWEA shares her experience and notices that the wind energy is becoming one of those sectors for which the salutation 'ladies and gentlemen' during the conferences, meetings etc. becomes simply inappropriate. The participation of women to events related to the wind energy is extremely low, which reflects also the low female rates among the workforce of wind.

The list of most common job profiles in this sector offers the first – even though partial – explanation for the low participation of women: engineers, technicians, manufacturers and installers are the most popular jobs. These profiles require degrees in study fields where women have been traditionally under-represented, namely those of mathematics, science and technology. It seems that it is harder to beat centuries of stereotypes about 'male' and 'female' occupations, which still constrain women in their choices, than beating the need for

physical strength in jobs.

Training and re-training opportunities should also take into account gender issues, in planning and managing life-long learning activities and initial and continuous trainings. Yet, female population still participates less to vocational education and training and therefore loses a change to update and upgrade competences in non-traditional fields.

In the above-mentioned interview, some female workers employed in wind energy as engineers, managers, CEOs or researchers, shared their working experience. All of them expressed satisfaction with their jobs and did not complain about any kind of work-place sexism or discrimination. Yet all of them noticed a number of obstacles they have to face regularly. As in many other sectors, also the wind energy profiles are designed around the male life-cycle: while men are building their careers in the mid 30s, many women are obliged to leave their work in order to take care of children, as most Member States experience problems with childcare facilities and services. Wishing to avoid double burdening of their female employees, employers often prefer not to assign challenging tasks to them. In this way, they neglect important opportunities for progress to employed women, who experience the phenomenon of glass-ceiling very often. There could be more effective solutions, such as flexible time arrangements, part-time work not only for women, but also for male labour force, childcare facilities etc.

Kristen Graf, the executive director of Women of Wind

Energy (WoWE), an American non-profit organization promoting engagement, development and advancement of women in the sector, explained that many women in wind power feel isolated or non-accepted because they have so few female colleagues (Chris Rose, *Where are the women in wind?* Wind Directions, April 2009). Hence, working in the sector can be frustrating and psychologically hard to handle with for a woman. Considering all the positive characteristics of wind energy sector, it becomes clear that it has a great potential to become a model for developing greener and more sustainable jobs in a low carbon economy. Yet, it is essential to consider the risks and obstacles of its development, one of which is also the gender-biased participation of workforce, in order to provide for high and fully satisfied standards in terms of equity and decent jobs supply. The market seems to be aware of the obstacles and challenges of the Green revolution, one of which is how to satisfy the conditions for a transition to a low carbon economy. As noticed by Anne Panneels, Senior Advisor for the European Trade Union Confederation (ETUC) during the Brussels' Debate on Green Jobs, social partners at intersectoral level and in any sector dedicated to R&D and investment choices should be involved in development of skills and adapted training strategies. These should be well thought out and provided at the right time thanks to social dialogue and the anticipation of needs, ensuring that the jobs created will be quality jobs. During the

Conference, the training and education of more engineers and technical staff was identified as one of the key areas in creating new jobs. The importance of encouraging women was emphasized once again (www.ewea.org).

On its way to developing a functional market with prepared and competent workforce, wind

power industry should give a high degree of importance to the education, training and re-training opportunities of its existing and new workforce, in order to facilitate the supply to meet the demand on the labour market, without excluding gender issues. In this way, it could contribute to sustainable and green European

development, not only in terms of ecology, climate and employment, but also in terms of equity and equal opportunities for its population.

Selma Terzimehic
WiRES researcher

Psycho-social issues of women in “non-traditional” jobs

by Simona Piazza

Nowadays, even though women are more and more active and involved in the world of work, there is still much work ahead in terms of promotion, recognition and well-being of the female human capital, especially in the “non-traditional” work environment. “Non-traditional” work contexts refer to those sectors with a prevalence of male workers, e.g. the field of technology, and traditional male occupations, more generally.

Within the employment context, women frequently develop work-related stress. The issue is often given scant consideration, although it would be advisable to deal with in a deeper and more detailed way, especially when associated with company.

In Italy, the Legislative Decree No. 81/2008 makes provisions for occupational health and safety also introducing requirements for the company related to work-related stress assessment. Unfortunately, legislation is unable to provide

full protection in terms of risk-prevention involving women, as the assessment scheme dealing with work-related stress does not provide a significant value for the company, since it does not take into consideration gender differences or peculiarities.

Therefore, preventing, eliminating or reducing problems resulted from stress should involve not only the implementation of collective measures, but should also be based on individual awareness and responsibility. This means that risk-reduction interventions should be planned according to objective indicators, and integrated by the employer with measures based on the evaluation of subjective factors.

In general terms, stress is the typical reaction of the individual to the pressure developed within the working environment (be they external, internal, physical, or psychological). Anyway, environmental pressures or requests do not always result in a physiological response. In the

event of overworking both at an individual (due to a shortage in human resources) and collective level (due to excessive strain), the individual’s contrast capabilities are no longer functional, causing the stress to result in affecting his/her psychophysical status and consequently leading to a pathological condition.

The normal stress response gives rise to temporarily changes in the human body functions. Here are a few examples: an increase in arterial pressure and heartbeat, tachycardia, neck, head and shoulder muscles stiffness causing pain, mouth and throat getting dry, pyrosis (heartburn) due to excessive secretion of gastric juice. Such stress responses can cause serious health conditions that may become chronic if people suffer from stress on a frequent basis, or over a long period of time.

A guide to work-related stress issued by the European Commission, General Direction

for Occupation and Welfare (*Guida allo stress legato all'attività lavorativa*, Commissione Europea, Direzione Generale per l'occupazione e gli Affari Sociali, Lussemburgo, 2002), reported that stress as a physiological condition can develop into a pathological condition according to three main factors: intensity, repetition frequency, exposure time to stressful situation.

The same happens with stress associated with working activities, thus contributing to cause serious environmental (contextual), economic and health problems affecting the individual and leading to physical illnesses such as ischaemic cardiopathy, ictus, cancer, osteomuscular and gastro-enteric pathologies, accidents, psychical problems, such as anxiety; low levels of self-esteem resulting in depression and self-damaging behaviour, and loss of productivity and competitiveness on the part of company (La Rosa, M., Bonzagli, M., Grazioli, P. (eds.), *Stress at work. La ricerca comparativa internazionale*, Organizzazione internazionale del lavoro, Franco Angeli, Milano, 1994).

A European research (European Foundation for the Improvement of Living and Working Conditions, *Gender, Jobs and Working Conditions in the European Union*, 2002) points out that women are more exposed to stress at work since the task they carry out is associated with high levels of psychic weariness, with the conditions they operate in also contributing to such phenomenon. Causes of work-related stress can be summarised as follows:

- *work disadvantage* precarious work, insecurity related to the position held, work overload, heavy responsibilities without the appropriate degree of authority, less career recognition and economic bonus. Therefore, compared to men, women face a higher degree of vertical disparity. Despite an increase in the rates of working women throughout Europe, wage gaps and the lack of career opportunity still represent a major issue. As reported by an international study (C. Panetta, M.T. Romita, *Gender diversity e strategie manageriali per la valorizzazione delle differenze. Interviste HRC Academy a donne-manager di successo*, Franco Angeli, Milano, 2009) women are often confined to undertake intermediate-level positions (e.g. executives) in a “glass-ceiling” situation preventing qualified working women from achieving top-level positions. They do not have the chance to express their talent or skills, and experience the under-evaluation of their working capabilities within the “standard” productive process, as often improperly occupied. They are exposed to monotonous tasks and less involved in jobs requiring problem-solving and creativity. They have also restricted access to training, suffering from horizontal discrimination. In addition, they often have a busier life due to their household duties that, added to working hours, result in a work overload.

Training for conflict management and skills may help addressing women's work-related stress

- *violence threats* mobbing and sexual harassment at work. Such factor represents a major issue, as including abuse and persecution such as mobbing, as well as moral and sexual harassment, discrimination, and workers' dignity damages. *A recent research, Psycho physical fatigue as risk factor for the health of female workers*, carried out by ISPESL (Istituto Superiore Prevenzione e Sicurezza sul Lavoro) in 2009 (*L'affaticamento psico-fisico come fattore di rischio per la salute delle lavoratrici*, www.ispesl.it) shows that sexual harassment (any unwanted sexual behaviour offending the person's dignity at work, including physical, verbal and non-verbal attitudes) takes place more frequently than mobbing (moral violence and psychological persecutions at work, often carried out by superiors with a systematic, lasting and intense character) and today it is a relevant phenomenon also in Italy, where 728,000 women are victims of harassment, blackmail or violence. Women are exposed to blackmailing when entering the world of work, in their attempt to maintain their position (the most common cases), career advancement or any other occupational event. Analysis of health conditions and work-related stress factors allows to break down the prejudice according to which women are regarded as more likely to

become ill than men due to biological and individual factors, such as body constitution, weakness, fragility, and to identify their pathological condition properly. As widely known however, women live longer, yet in worse health conditions (European Agency for Safety and Health at Work, *Research on Work-related Stress*. Edizione italiana: Ricerca sul lavoro correlato allo Stress, ISPESL, Istituto Superiore per la Prevenzione e la Sicurezza del Lavoro, Roma, 2002).

In the 1990s, before first studies on the subject were carried out, women were considered to be less exposed to work and socio-environmental stress. As shown by a European research (Dupré D., *The health and safety of men and women at work, Statistics in Focus*, 4/2002, Eurostat, Office for Official Publications of the European Communities, Luxembourg, 2002), work-related stress for women is 5% higher than for men. Thus, it has a more pronounced impact on health and can be a frequent cause of illness. Indeed, as being the first cause of illness, the health system should consider while setting up diagnostic and curative measures, and the company should also focus on their implementation.

Furthermore, if we consider the issue of women work-related stress and its consequences within non-traditional contexts, such as the renewable energy industry, it is advisable to think up some solutions in order to promote the full women's wellness within the company, also providing organisational well-being at a second stage. Such considerations suggest that

it would be recommended for the employer to act on different levels:

- *Providing an "equipment"* that is to say, organising training courses about domains and roles in which women are under-represented, for instance, management and technology, as well as courses to enhance transversal competencies which are considered as less developed in women, such as, assertiveness, conflict management and leadership (C. Panetta, M.T. Romita, *Gender diversity e strategie manageriali per la valorizzazione delle differenze. Interviste HRC Academy a donne-manager di successo*, Franco Angeli, Milano, 2009).

- *Creating equal opportunities* by means of positive actions, mainly addressed to women, and to the development of childcare services or any similar service involving any other dependent family member.

- *Appreciating gender diversity* through the diversity management, based upon the use of skills assessment and the framing of customized training.

- *Revising cultural models* trying to unsettle the traditional role attributions, both at an organizational and social level, for instance, actions targeted at boosting either paternity or the redefinition of family balances.

Legislation is not sufficient to ensure the attainment of these actions. In order to do it, a synergy is required between companies, social partners, the socio-cultural bodies and, primarily, women themselves, since they are the real

protagonists of this possible change.

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Publications



Il commentario analizza in modo **organico** e **completo** la nuova normativa in materia di salute e sicurezza sui luoghi di lavoro, aggiornata al decreto legislativo n. 106 del 2009. L'opera offre, in un'**ottica interdisciplinare** e **altamente specialistica**, una **prima interpretazione** del nuovo testo normativo e, grazie agli **schemi riepilogativi** e di **sintesi**, fornisce le **linee guida** indispensabili per la risoluzione dei nodi problematici e delle principali questioni emergenti.

This Dossier has been created in collaboration with the members of Adapt

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Adapt Dossier – On-line Publication of the Adapt book series

In-depth study on issues relating to the industrial relations and the labour market – Issue 12, 7 July, 2010

Registrazione n. 1609, 11 novembre 2001 – Tribunale di Modena