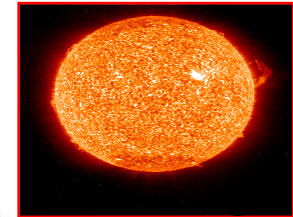




instituto sindical
de trabajo, ambiente y salud

Future skills needed in renewable energies in Spain: “A vision of enterprises”



Javier Gómez Prieto

08/10/2008



- ✓ *What is ISTAS?*
- ✓ *Last report carried out by ISTAS*
- ✓ *Skill requirements*
 - *Occupations*
 - *Qualifications*
 - *Training requirements*
 - *Industry specific requirements*
 - *Professional profiles*
 - *Results*
- ✓ *Conclusions*



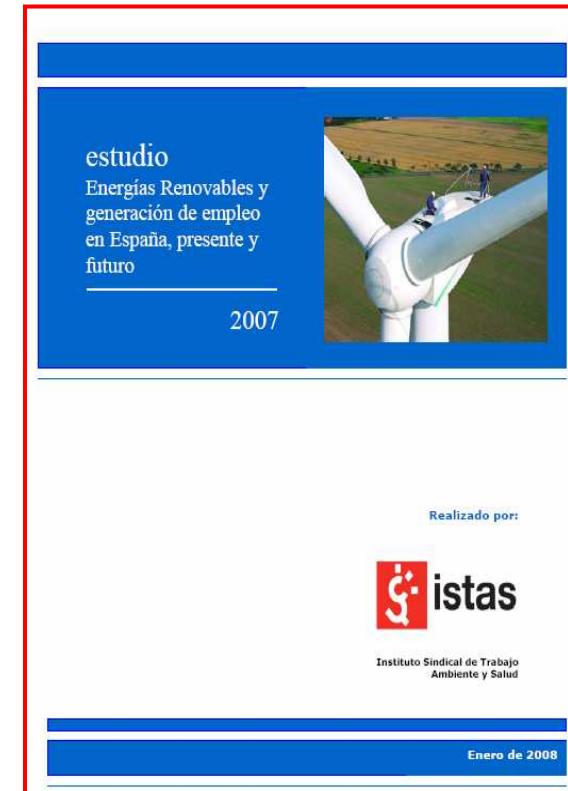
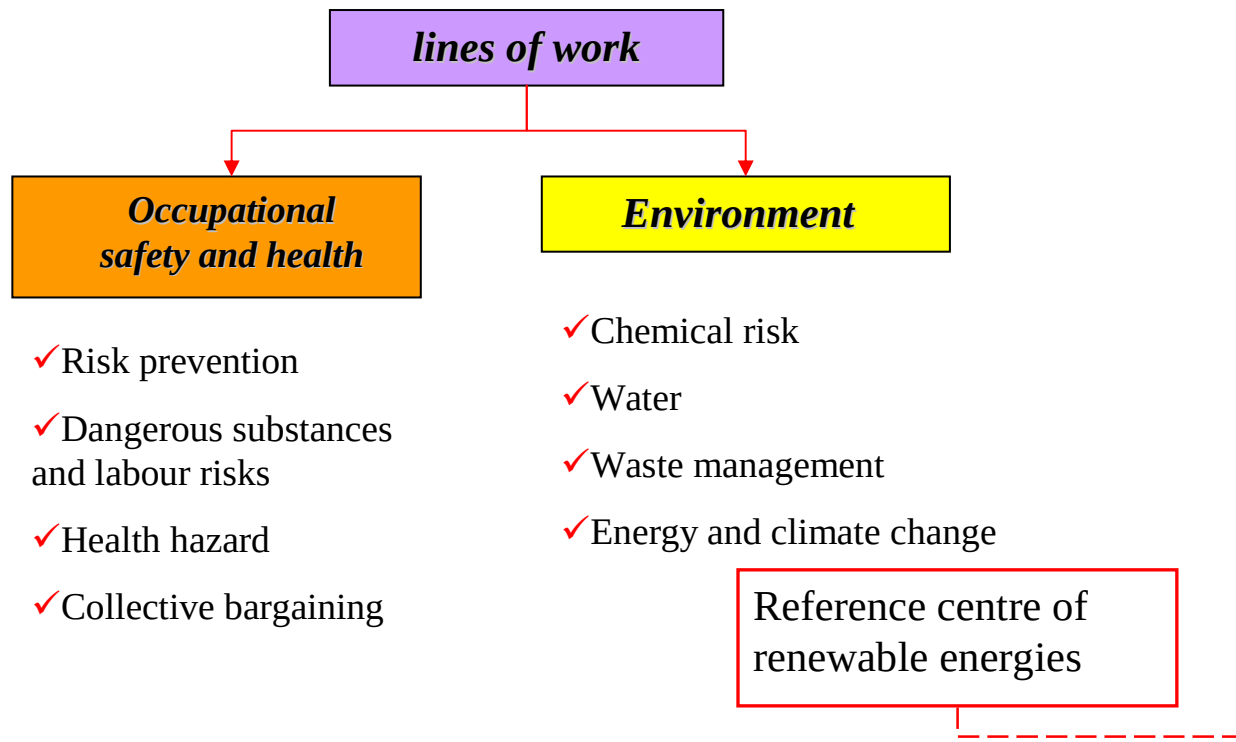
What is ISTAS?

*ISTAS (Union Institute of Work, Environment and Health) is a **self-managed trade union's technical foundation** supported by the Spanish Trade Union Confederation CCOO to promote the improvement of **working conditions, occupational health and safety and environmental protection in Spain.***

Research, studies, publications and actions carried out by ISTAS have a basic operative goal: the improvement of health and safety at work and environmental protection.



What is ISTAS?



Report 2007:

“Renewable energies and employment generation in Spain, present and future”.

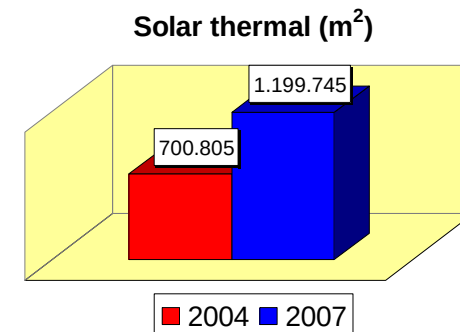
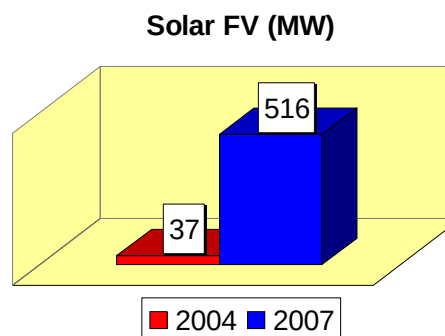
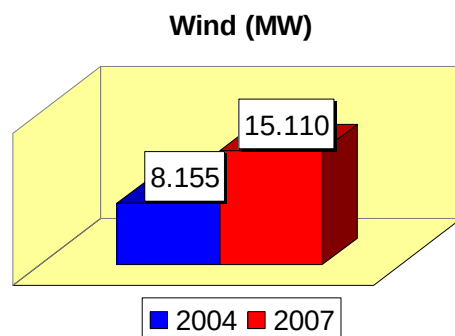
<http://www.istas.net/web/index.asp?idpagina=3371>

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Renewable energies evolution in Spain

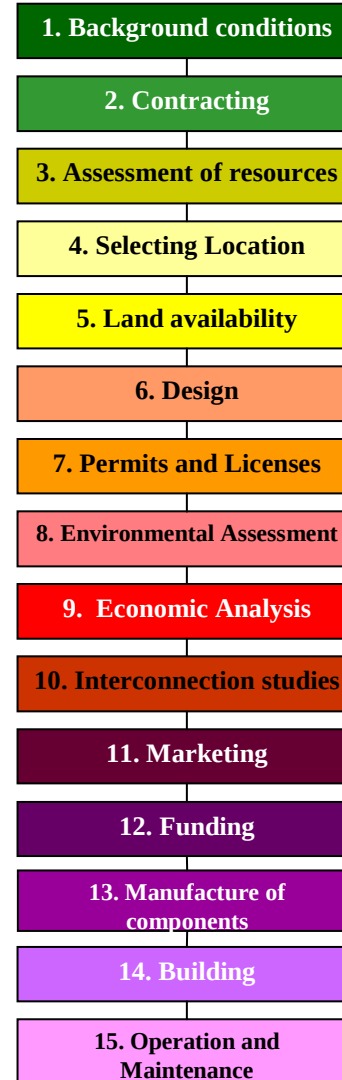
Renewable energies evolution in Spain, in very few time...





Renewable energies and employment generation in Spain

Stages of development of renewable energies



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Occupations

- ✓ *The required occupations demand no great differences among different sub-sectors.*
- ✓ *Lack of sufficient technical experience.*
- ✓ *Technologies of a higher trajectory present better defined occupations.*
- ✓ *Industrial engineers are in demand by promoters and also for management positions in plant construction, installation and manufacturing.*



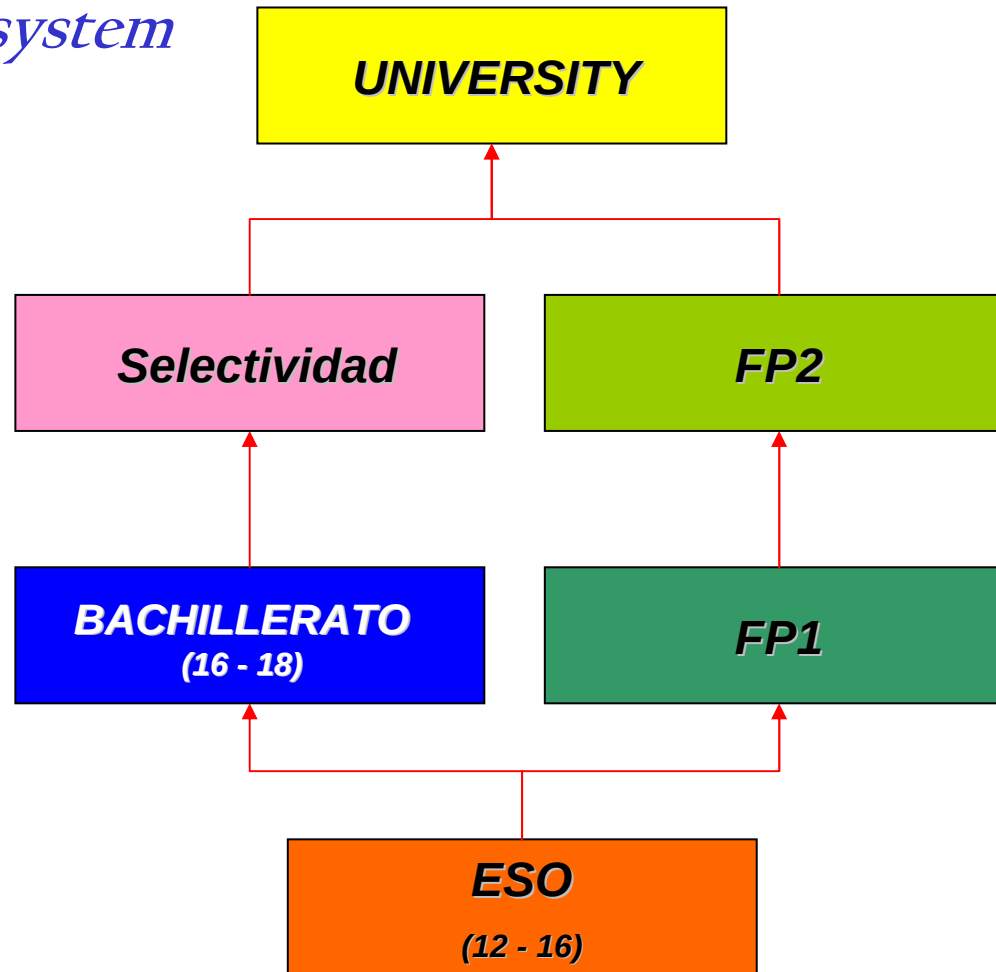
Qualifications

- ✓ *In spite of heterogeneity of the sector there are two points in common:*
 - ✓ *Electricity generation.*
 - ✓ *The trend towards globalization.*
- ✓ *Electricity production should be taken into account in training.*
- ✓ *English knowledge is required at all levels. Language requirements are concentrated especially among the more skilled jobs but they are not limited only to them.*



Training requirements

*But before, Spanish
education system*



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Training requirements

- ✓ *Intensive training of advanced students at university is preferred as a reformulation of the whole career program (syllabus).*
- ✓ *Universities: a practical approach would suffice in final stages of the courses.*
- ✓ *Vocational training: an emphasis on electronic and electrical maintenance would be better.*
- ✓ *Continuous training: useful as it is more adaptable to the realities of a fast growing sector.*
- ✓ *The companies are making an effort to provide training at all levels.*
- ✓ *Globalization creates the need to adapt to any training requirements of the international market.*



Industry specific requirements

- ✓ *Tendency towards outsourcing:*
 - ✓ *High Qualification.*
 - ✓ *Outsourcing less qualified jobs*
 - ✓ *Creation of interdisciplinary work teams*

- ✓ *Experience:*
 - ✓ *Young people = little experience.*
 - ✓ *High rotation among workers*
 - ✓ *Offer short courses*

- ✓ *Geographic criteria:*
 - ✓ *globalization*
 - ✓ *locating of power plants*
 - ✓ *knowledge of foreign languages*
 - ✓ *Availability to travel*



Professional profiles

- ✓ University graduates: industrial, mechanical and electrical engineers. Specific training is provided by enterprises.
- ✓ Technical graduates (FP1 graduates): wide spectrum of training. Less languages requirements but still important.
- ✓ Tecnicos: qualified from FP2 graduates; electrical and mechanical background.
- ✓ Power plant operator: requiring more training continuously.
- ✓ Sales technician: salesmanship + specific knoweledge in renewables industry. Job based with frequent travel to client's premises.



Particular professional types

- ✓ *Expatriate: to coordinate and manage activities in other countries. Terms of two or three years abroad.*
- ✓ *International: working at headquarter but on activities related to international projects.*
- ✓ *Trainee worker (scholarship holder): from this category to direct contracting by the company. Internships from 6 months to one year.*



Jobs difficult to fill

Two aspects determinant in filling vacancies

- ✓ *Decentralization of activity: not everyone wants to be out of their home, and renewable energies is a dynamic sector which demands a lot of people willing to go abroad.*
- ✓ *Lack of experienced workers: poses a major problem in the highest qualification area. Sometimes companies prefer training unskilled people instead of looking for workers.*



Results

- ✓ Qualifications, it is quite remarkable as the relative weight of the university graduates within the set of qualifications propose in this sector.

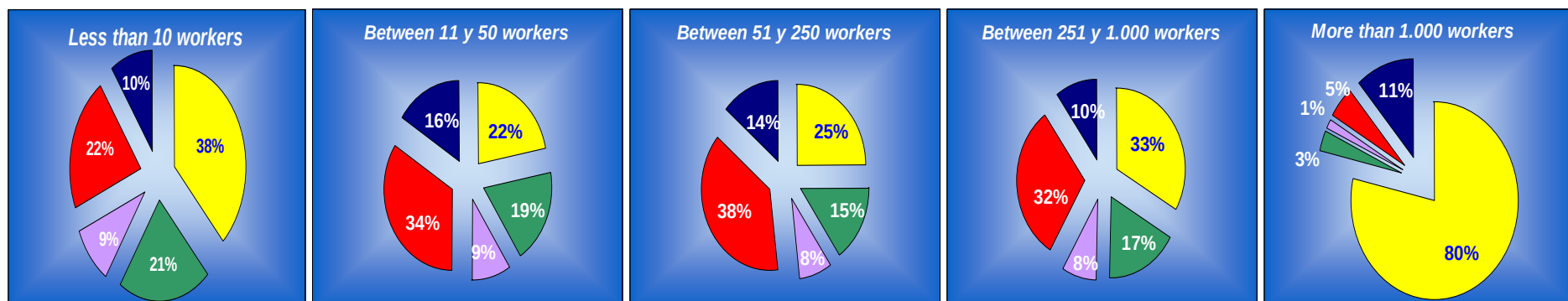
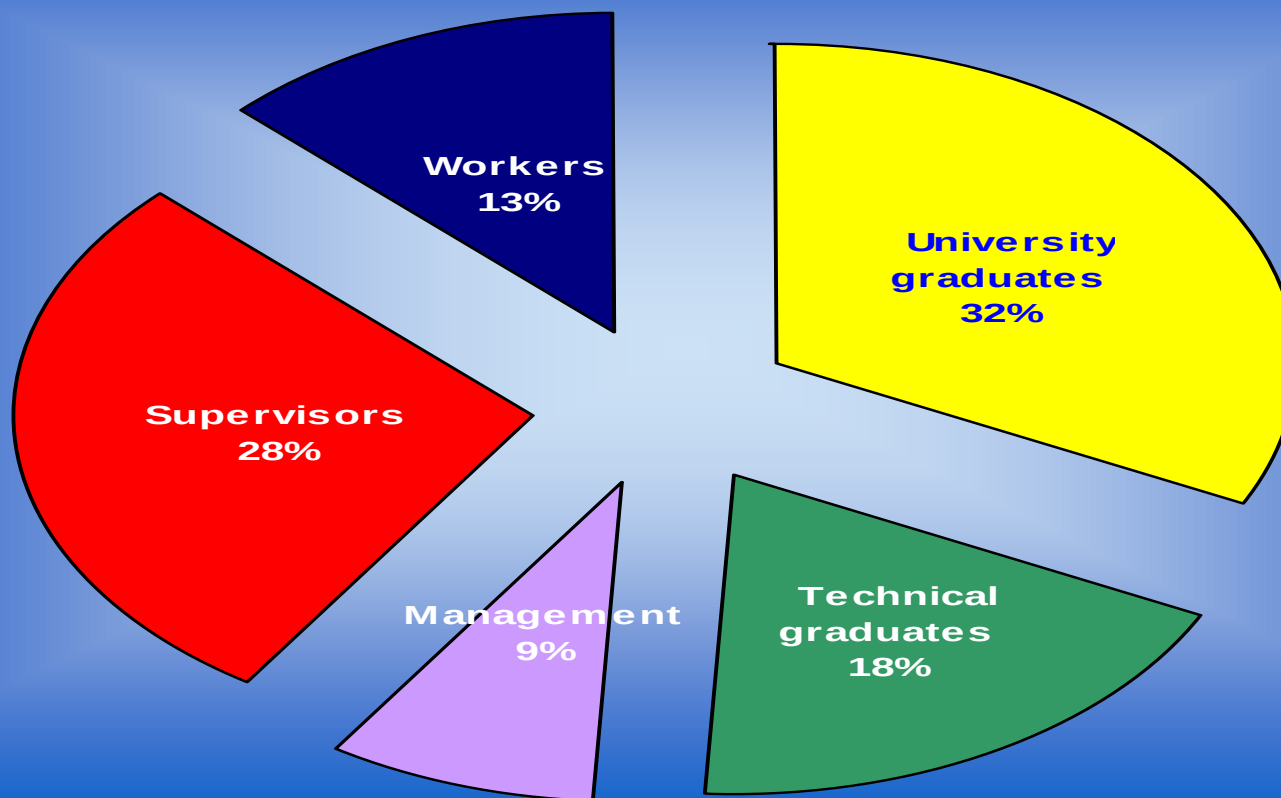
Distribution of personnel by qualification (%)

Qualification	Company size by number of workers					
	< 10	11-50	51-250	251-1.000	>1.000	TOTAL
University graduates	38,0	19,7	24,9	33,4	26,9	32,3
Technical graduates	21,2	17,1	15,4	17,0	11,4	18,4
Management	9,4	8,3	7,7	7,9	4,4	8,6
Supervisors	21,7	30,7	38,2	31,7	18,0	28,0
Workers	9,7	14,3	13,8	10,0	39,3	12,7

Source: ISTAS

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Staff qualification





Results

- ✓ It is noteworthy that the development of projects, which generally account for 20% of the workforce. In the case of large companies, this percentage reaches 41% of the total workforce.

Distribution of personnel by major departments (%)

Main departments	Company size by number of workers					
	< 10	11-50	51-250	251-1.000	> 1.000	TOTAL
Production	33,5	45,4	48,5	44,5	45,5	40,9
Marketing	8,9	12,6	11,1	13,9	3,0	10,8
Administration	14,7	13,2	11,5	12,3	9,7	13,5
Project development	19,7	18,6	20,3	20,5	40,8	19,8
Management	18,9	9,8	8,5	8,8	1,0	13,2

Source: ISTAS

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✓ Other factors, in addition to the training, are taken into account when recruiting staff, vary in their relative importance of some other jobs:

importance attached to different factors

Features	Director's position	University graduate	Technical graduate	Management	Supervisors	Workers
Availability to travel	41,5	56,4	32,9	17,1	19,0	7,3
Continuous training	16,6	37,0	42,9	33,4	33,2	14,2
Postgraduate Courses	26,5	32,5	4,7	0,5	---	---
English knowledge	41,7	58,5	26,8	6,9	4,7	2,4
Other languages	18,7	16,1	6,4	1,7	1,2	0,2
Experience	34,6	51,9	35,5	35,5	34,6	11,4
Age limit	2,1	5,9	4,5	2,6	7,8	4,7

Source: ISTAS



✓ Difficulties in filling jobs:

Difficulties in filling jobs

Type of job	% companies
Management	4,3
University graduates	16,1
Technical graduates	11,4
Management	4,3
Supervisors	27,7
Workers	6,9
NA – No difficulties	53,8

Source: ISTAS



Conclusions

- ✓ *Improvement in the skills and qualifications of workers is a prerequisite for the renewable energy development which is a high added value industry and demanding in technological aspects.*
- ✓ *Energy technologies studied reveal different levels of development. There is a clearer definition of occupations and qualifications in those longer-established energy technologies. A stronger focus on the emerging technologies will lead to an increased in the workforce in the medium term.*
- ✓ *Continuous training is essential to the creation of qualified and well-paid jobs.*
- ✓ *Identification and assessment of particular occupations must be a shared effort from enterprises, government and workers in order to provide training in appropriate skills and competences.*



Thanks

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