



# GSS-VET

## *Geothermal & Solar* skills

VOCATIONAL EDUCATION AND TRAINING



### Provide TRAINING

Assist electricians and plumbers in gaining expertise in geothermal and solar installations

2

goals



### Improve SKILLS

Facilitate unemployed as well as active workers to upgrade their geothermal and solar skills



Funded by the  
Erasmus+ Programme  
of the European Union

# THE *GSS-VET* PROJECT



The EU's strategy for sustainable growth puts innovation and green growth at the heart of its blueprint for competitiveness, leading to a whole new demand for environmental skills in the construction sector. However, training providers have not yet caught up with this new skills demand, creating an important skills gap in the current labour market.

Following the identification of skills needs, the scope of the GSS-VET project is to create an innovative training including work-based learning, ubiquitous learning and flipped classroom for geothermal and for solar energy system installers (EQF level 4-5). The training content is focused on technical skills but also on transversal ones, including entrepreneurship, ICT, interdisciplinary skills and ability to work effectively with people from other disciplines.

For the above an e-Learning Platform has been designed with corresponding digitalized contents. 40 trainers and 200 workers will directly be trained during the project's lifetime, and thanks to the involvement of VET providers, sectorial organizations (including an EU umbrella), regional authorities and other associated partners, 2,500 workers will be trained by 2025.

# GREEN JOBS AND SUSTAINABLE *GROWTH FOR EUROPE*

## Climate protection is my job

- Renewables (RES) are the future of energy.
- RES protect climate and the environment.
- RES offer new employment opportunities, while careers in non-renewable energy fields seem to be fading away.
- RES create more employment than fossil fuels.
- RES offer new career opportunities for people involved in traditional energy sectors.
- Working with RES strengthens morale and job satisfaction. Two important parts of this are; being proud of what you do, and feeling as if your work contributes to the greater good.
- Jobs in the renewable industry usually pay comparatively well, and consistent salary growth tends to be very common in many countries.
- RES contribute to regional development and innovation, and promote decentralization and energy democracy.
- Promoting energy communities and self-consumption is strongly supported by European policies.

Taking a leading role, the EU is supporting a Green New Deal for achieving the targets of the Paris Agreement on Climate Change and a full decarbonization of the European economy by 2050. As most European countries are heading to decarbonisation, many jobs in non-renewable energy fields seem to be fading away. It is important to offer new opportunities to people who feel threatened by this development. Training in new energy fields such as the ones covered by the GSS-VET project can offer new career opportunities for people involved in traditional energy sectors.

Even traditional craftsmen can find new career opportunities. As some renewable energy (RES) technologies (such as photovoltaics for example) are booming, new job opportunities can arise for electricians with no particular expertise on the field, provided that they are offered appropriate training. When reading about solar energy job trends, you often see a lot of focus on the high level, technical jobs. While it is true that there are many openings for people with degrees and experience in science, technology and engineering fields, the solar industry has plenty of opportunities in other areas. These include sales, labour, and support. There are even jobs in education for people pursuing solar energy jobs. Someone open to seeking out just a bit of training has an excellent chance of having a very successful solar career.

# The importance of green jobs

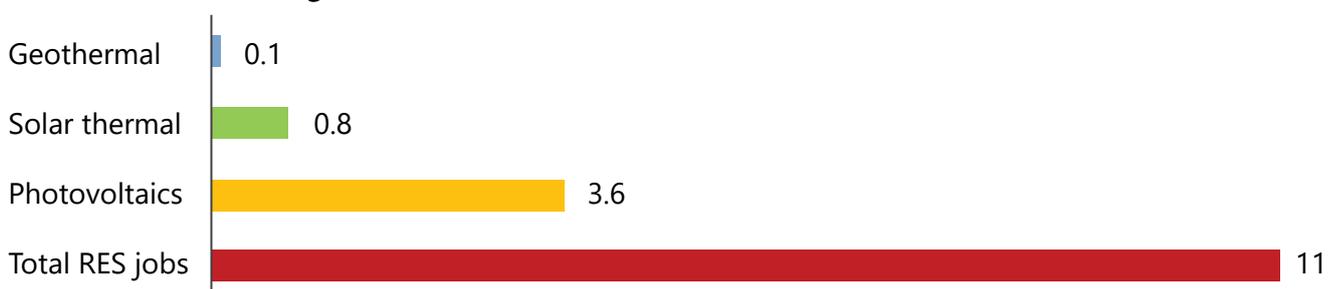
Employment trends and patterns are shaped by a wide range of technical, economic and policy-driven factors. Such factors include:

- Robust EU policy on the promotion of renewables and sustainable growth.
- Governmental policies, including the degree of commitment to transforming the energy sector. Policy encompasses mandates, regulations and market design in support of deployment, as well as industrial policies to create and strengthen domestic value creation.
- The falling costs of renewable energy technologies continue to spur their deployment.
- Corporate strategies and industry realignments are important factors in this context, as portions of the supply chain become more globalized and geographically differentiated.
- An ever increasing number of communities are engaging in Green Cities initiatives thus promoting and supporting renewable energy.



An increasing number of countries derive socio-economic benefits from renewable energy. According to IRENA (International Renewable Energy Agency), global renewable energy employment reached 11 million jobs in 2018. The PV industry in particular was the largest employer (3.61 million jobs in 2018).

## Global RES jobs (million jobs in 2018)



Source: IRENA, *Renewable Energy and Jobs. Annual review 2019*

# The case of photovoltaics

Activity	Jobs
Project planning	1%
Manufacturing and procurement	22%
Transport	2%
Installation and grid connection	17%
Operation and maintenance	56%
Decommissioning	2%
<b>Total person-days for 50 MW</b>	<b>229,055</b>

*Distribution of human resources required along the value chain for the development of a 50 MW solar PV plant, by activity (source: IRENA, 2017)*

These jobs are created either locally (at the power station site) or in other regions and/or countries (when it comes to manufacturing of certain equipment). In order to estimate the national employment created, one has to take into account the local content of the equipment used. For most European countries, the local content when it comes to RES equipment is in the order of 15%. It is important to stress that the national added-value of RES projects is much higher than people often think. The national added-value in many European countries is in the order of 60%. With regard to indirect and induced employment, a 2.2 multiplier is often suggested.



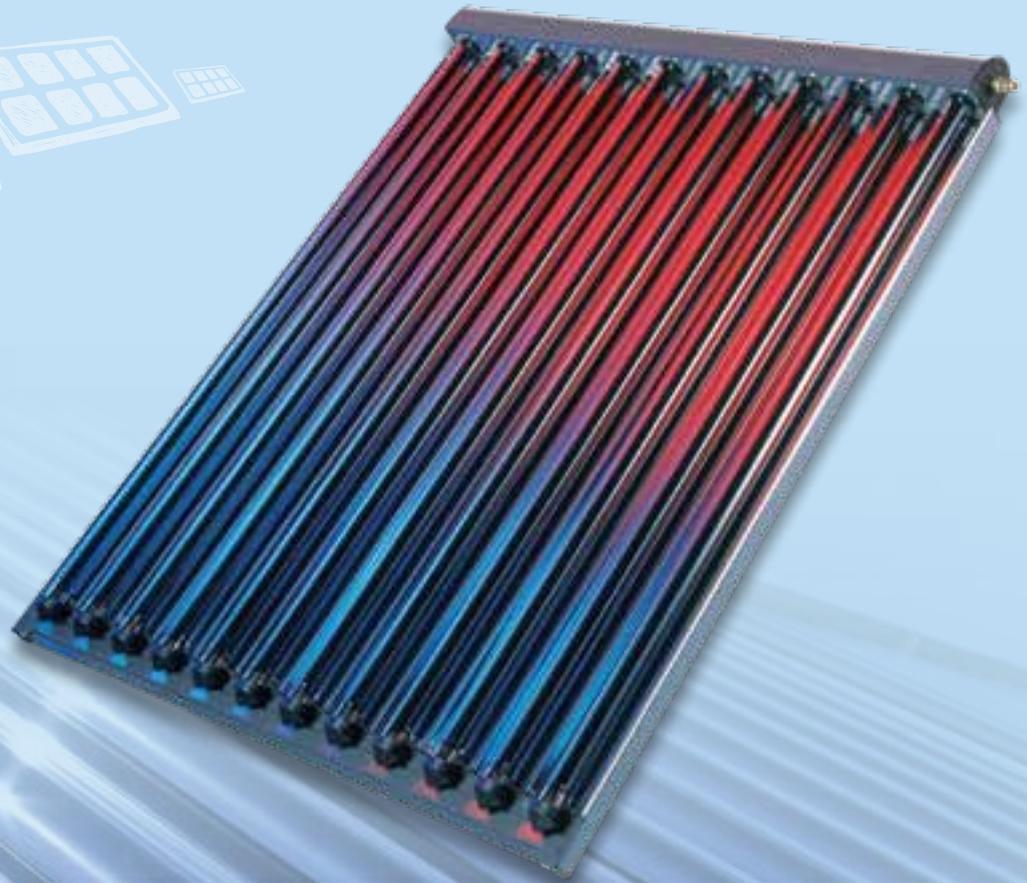
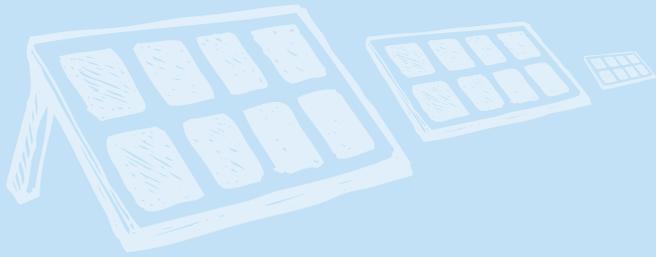
The European photovoltaic sector continues to prove its socio-economic value in Europe, both in terms of job creation and Gross Value Added (GVA).

The sector also highlights the importance of small-scale projects and regional development. In 2016, for example, rooftop PV installations supported almost 3 times as many jobs and GVA than large ground-mounted installations. This can be explained by their installed capacities and labour needs for installation, maintenance and operations. Furthermore, 75% of solar jobs are local jobs.

Respectively 75% and 73% of the share of jobs and GVA in 2016 was linked to the downstream activities of the PV value chain (i.e. development and installation of systems). Downstream activities of the PV value chain are more labour intensive than upstream activities.

Direct jobs and GVA are related to the PV industry specifically (e.g. manufacturing of PV modules, installation and maintenance of PV systems) while indirect jobs and GVA stem from supplying industries (e.g. transport, manufacturing of certain materials, professional services).

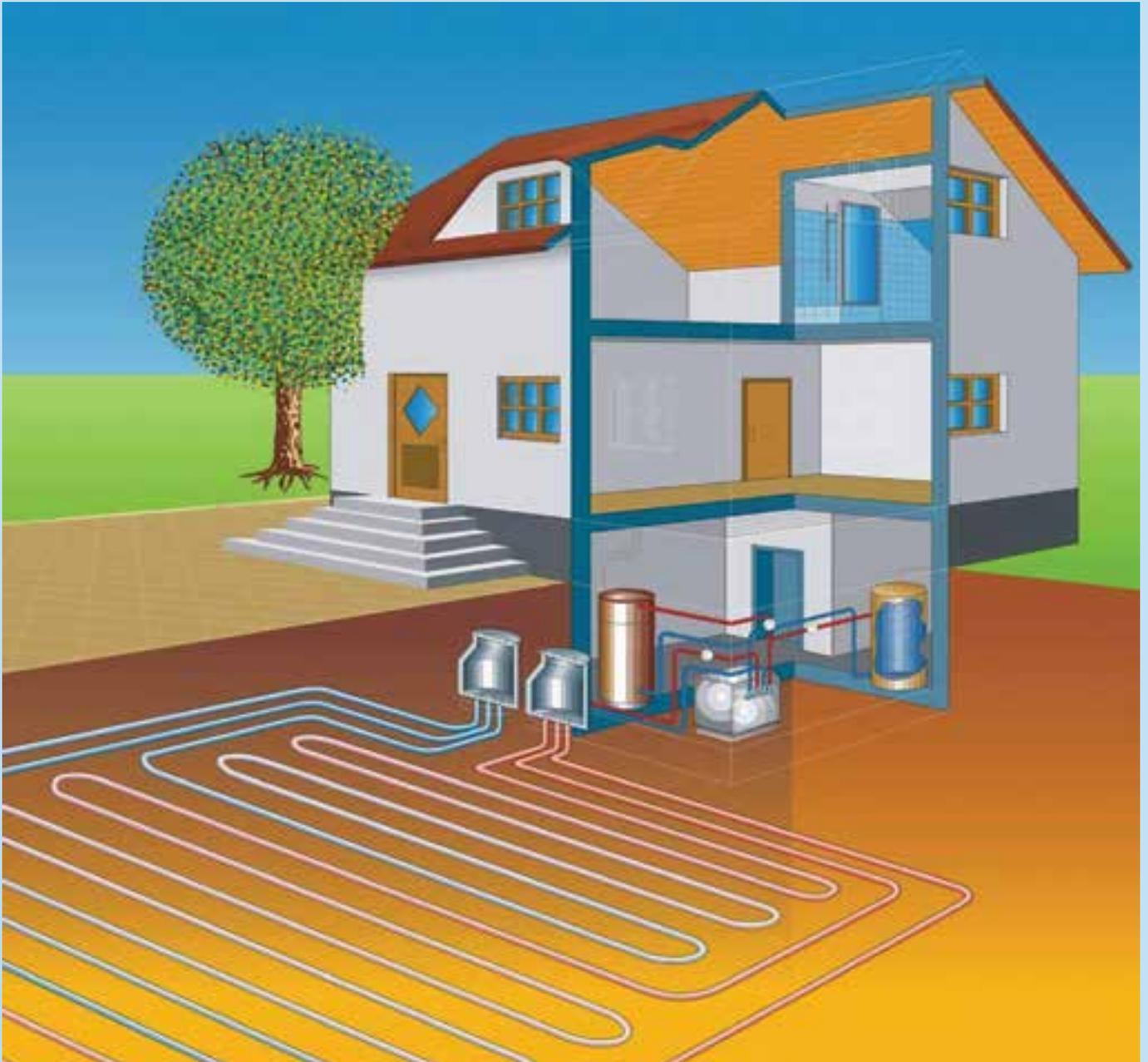
# The case of solar thermal



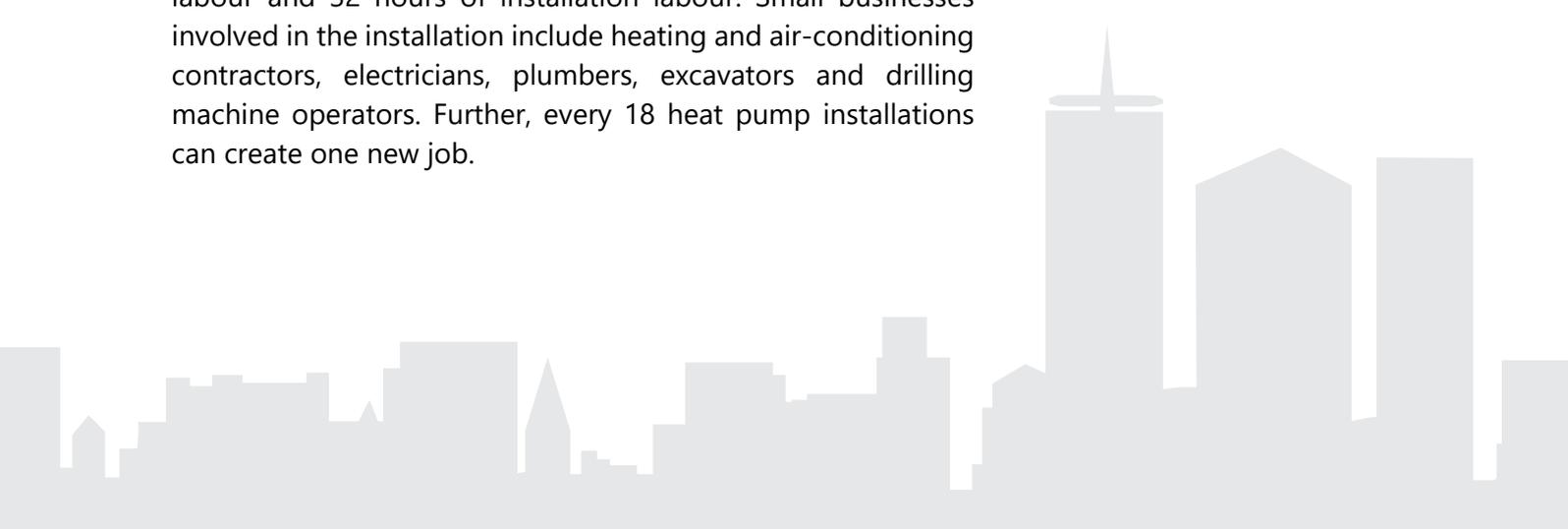
With regard to solar thermal, a total of 87-200 m<sup>2</sup> solar collector area has to be installed on average per full time job depending on nature of application. More specifically:

In countries with high labour cost, advanced automated production of flat plate or evacuated tube collectors and heat storages – pumped systems, a total of 133 m<sup>2</sup> solar collector area has to be installed on average per full time job. In countries with low labour cost and advanced automated production of evacuated tube collectors and heat storages – thermosiphon systems a total of 87 m<sup>2</sup> solar collector area has to be installed per full time job on average. The same collector area has to be installed per full time job in countries with mainly manual flat plate collector production and low labour cost. For swimming pool systems with unglazed polymeric collectors or air collectors around 200 m<sup>2</sup> solar collector area has to be installed per full time job.

# The case of geothermal



Every geothermal heat pump requires 24 hours of manufacturing labour and 32 hours of installation labour. Small businesses involved in the installation include heating and air-conditioning contractors, electricians, plumbers, excavators and drilling machine operators. Further, every 18 heat pump installations can create one new job.





# GSS-VET



Contact and information:  
[www.gss-vet.eu](http://www.gss-vet.eu)



The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Erasmus + Sector Skills Alliances  
575891-EPP-1-2016- 1-EL-EPPKA2-SSA

Funded by the  
Erasmus+ Programme  
of the European Union



## GSS-VET PARTNERS

The project is realized by a Consortium of 15 partners from: Bulgaria, Germany, Greece and Spain

