

# Clean Energy Transitions: Workforce, Policies, and Implementation Strategies to Ensure Justice, Equity, Diversity and Inclusion (JEDI)

December 6, 2022

# Today's Presenters



**Annette Hollas**  
*Natural Resources Canada;  
Co-lead for Empowering People Initiative*



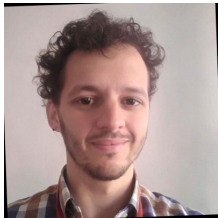
**Robert Horner**  
*U.S. Department of Energy;  
Co-lead for Empowering People Initiative and Clean Energy Solutions Center*



**Debra Rowe**  
*United Nations Environment Programme-  
Youth and Education Alliance & Higher Education Sustainability Initiative*



**Samah Elsayed**  
*International Renewable Energy Agency*



**Pablo Jacome Alvarez**  
*European Commission; Co-lead for Empowering People Initiative*



**Olubunmi Olajide**  
*Student Energy*



**Rajul Pandya**  
*American Geophysical Union;  
Thriving Earth Exchange*



**Daniel Dang**  
*SolarPower Europe*



**Olga Strietska-Illina**  
*International Labor Organization*

# Empowering People Initiative

Presented by Annette Hollas

December 6, 2022

# Empowering People Initiative

- The Empowering People Initiative (EPI) is a horizontal initiative under the Clean Energy Ministerial (CEM).
- Canada, the U.S and the European Commission launched the EPI at the twelfth Ministerial in 2021, to recognize an area of work that is currently underemphasized by the technology-oriented nature of many CEM initiatives and campaigns.
- The EPI aims to build on and complement existing work streams that already promote equity and inclusivity, such as the Equality Initiative (previously known as C3E International) and the Equal by 30 Campaign.

## Objective

To highlight critical socio-economic elements of the energy transition as it relates to advancing skills, inclusivity and workforce development in clean energy.

## Ambition/Target

To bring forward novel approaches and diverse perspectives needed to move the needle on achieving a just and equitable transition for a clean energy future

# Empowering People Initiative

## Co-leads



## Participants



## Partner Organizations



## Key Deliverables

1. IEA-EPI **Report** on [Skills Development and Inclusivity for Clean Energy Transitions](#).
2. ISGAN-EPI 2022 **Award** of [Excellence in Smart Grid Workforce Development for an Inclusive Energy Transition](#). The award was presented to Reena Suri, Executive Director of the India Smart Grid Forum, at CEM13 in Pittsburgh.
3. CESC-EPI **Webinar** on Clean Energy Transitions: Workforce, Policies, and Implementation Strategies to Ensure Justice, Equity, Diversity and Inclusion.

# Thank you!

Contact the CEM Secretariat to get in touch with the EPI Team:  
[Secretariat@CEMSecretariat.org](mailto:Secretariat@CEMSecretariat.org)

# Clean Energy Solutions Center

Presented by Rob Horner

December 6, 2022

# The Clean Energy Solutions Center

## OBJECTIVE

To accelerate the transition of clean energy markets and technologies.

## RATIONALE

Many developing governments lack capacity to design and adopt policies and programs that support the deployment of clean energy technologies.

## AMBITION/TARGET

Support governments in developing nations of the world in strengthening clean energy policies and finance measures

## ACTORS

### Leads:



### Operating Agent:



### Partners:

More than 40 partners, including UN-Energy, IRENA, IEA, IPEEC, REEEP, REN21, SE4All, IADB, ADB, AfDB, and other workstreams etc.

## ACTIONS

- **Deliver** dynamic services that enable *expert assistance, learning, and peer-to-peer sharing of experiences*. Services are offered at no-cost to users.
- **Foster** dialogue on emerging policy issues and innovation across the globe.
- **Serve** as a first-stop clearinghouse of clean energy policy resources, including policy best practices, data, and analysis tools.

## UPDATES

### Website:

[www.cleanenergyministerial.org/initiatives-campaigns/clean-energy-solutions-center](http://www.cleanenergyministerial.org/initiatives-campaigns/clean-energy-solutions-center)

### Factsheet:

[www.nrel.gov/docs/fy22osti/83658.pdf](http://www.nrel.gov/docs/fy22osti/83658.pdf)

**Requests:** Now accepting Ask an Expert requests!



# The Clean Energy Solutions Center



## Ask an Expert Service

- Ask an Expert is designed to help policymakers in developing countries and emerging economies identify and implement **clean energy policy** and finance solutions.
- The Ask an Expert service features a network of more than **50** experts from over **15** countries.
- Responded to over **300+** requests submitted by **90+** governments and regional organizations from developing nations since inception



## Training and Capacity Building

- Delivered over **300** webinars training more than **20,000** public & private sector stakeholders.



## Resource Library

- Over **1,500** curated reports, policy briefs, journal articles, etc.



For additional information and questions reach out to Jal Desai, NREL, [jal.desai@nrel.gov](mailto:jal.desai@nrel.gov)

# Green Jobs Initiatives: Creating Workforce Readiness for the Green Economy

Debra Rowe

*on behalf of UNEP-YEA and HESI*

*December 6, 2022*

# Green Jobs: Workforce Readiness for the Clean Energy Transition

## Collaborators:



**US Partnership  
for ESD**



**Green Learning  
Network**



*SDG Publish  
Compact  
Fellows*



Contributors from the following groups to the Guidance Document:

EAUC

IAU

ILO

IRENA

NYEC

SDSN

UNEP

UNESCO

UNIDO

UNITAR

UPF

World Bank

# The clean energy companies are very busy.

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**Solution:** HESI's and UNEP-YEA's Green Jobs initiative is designed to help employers meet workforce needs more effectively.

# Outcomes for clean energy first, then the broader green economy

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## Improved:

1. Curricular upgrades and employee skills
2. Career Guidance
3. Student/Employee recruitment & job placements
4. More useful research aligned to climate and other SDGs

# Our Progress So Far - 5 key areas

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1. Created a community of > 4000 members:
  - Higher education leaders like rectors, educators, curricular decision makers
  - Career advising associations
  - Employers from business/govt/non-profits
  - Trade associations and their members
  - Policymakers
  - Ministers and their staff
  - Student organizations

# Our Progress Continued

---

2. Held two introductory convenings:
  - a. One for educators with International Association of Universities (IAU)
  - a. One for clean energy employers and trade associations with REN21

# Our Progress Continued - Held two Solutions Summits

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3. First Solutions Summit was on sharing challenges and possible solutions regarding:

- Recruitment,
- Career Advising,
- Employee Placement & Retention



# Our Progress Continued (Solutions Summits)

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4. Second Summit was held in partnership with the SDG Publishers Compact Fellows:

<https://www.sdgcompactfellows.org/>

Convened journal editors and publishers to:

- Create more relevant research
- Get the results out to practitioners
- Aligning educational materials with climate issues, clean energy and SDGs

## 5. Next Solutions Summits

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- For technical and community colleges
- For K12
- For funders
- For practitioners and researchers
- For employers and educators and job placement staff
- For career advisors and recruiters
- For policymakers

# **NEW Green Jobs for Youth Pact**

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**UNEP  
UNICEF  
ILO**

Make the transition to a low-carbon, circular and nature positive economy via:

- Employment and entrepreneurship,
- Environmental education,
- Empowerment and youth partnerships

# Other Current Projects/Collaborations

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1. [ICLEI Global](#) and [Thriving Earth Exchange](#) and [EPIC-N](#): increasing city-level climate mitigation/adaptation by connecting technical experts and students to communities
  
2. [Power for All](#):  
India and Africa focus on workforce for the energy transition - distributed renewable energies

# Other Current Projects/Collaborations

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## 3. [Clean Energy Ministerial](#):

- policy library and policymaking collaboration

## 4. International Youth for Climate Education coalition

## Other Current Projects/Collaborations

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5. International platform for knowledge items and networking - [Green Learning Network](#)
6. IRENA and their Energy Education Network
7. [ILO's new tool for TVETs](#) and their great work on workforce action planning for countries

## For more information:

[DebraRowe@aya.yale.edu](mailto:DebraRowe@aya.yale.edu)

*US Partnership for ESD*

*UNEP-YEA*

*HESI*

Congrats on all you  
have done

Congrats on all you  
will do in the future

Thanks to Evey Mengelkoch, Education for  
Green Jobs Coordinator for help with the presentation slides.

**Thank you!**

[DebraRowe@aya.yale.edu](mailto:DebraRowe@aya.yale.edu)



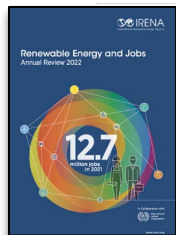
# Energy Transition Education Network

Samah Elsayed, Programme Officer- Renewable Energy Education  
International Renewable Energy Agency (IRENA)



ENERGY TRANSITION  
EDUCATION NETWORK

# Renewable Energy Workforce



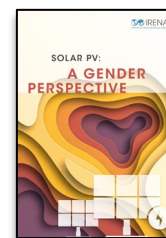
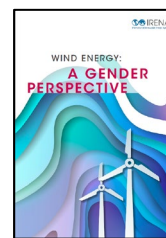
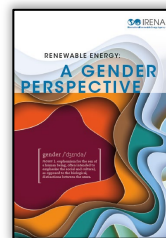
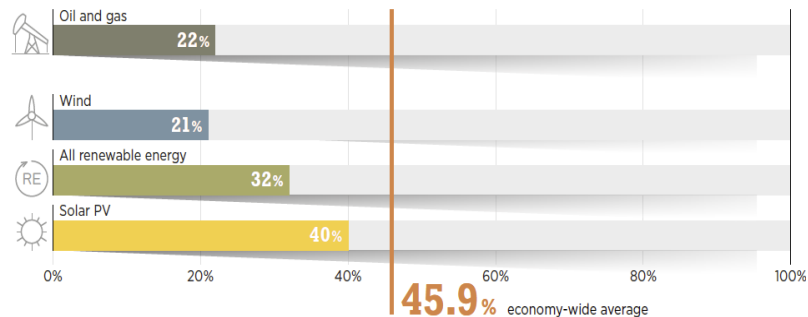
**12.7 million RE**  
jobs in 2021



**43 million RE**  
jobs in 2050  
(122 million ET jobs)



## Women in Renewable Energy



ENERGY TRANSITION  
EDUCATION NETWORK

# Energy Transition Education Network

**New global partnership between organisations and institutions working at the forefront of both education and energy.**

Energy Education for Societal Transformation

- Ensuring that all people have the knowledge and information they need to be empowered to demand and contribute a sustainable energy future.

Educating the Energy Transition Workforce

- Building the skills and human resource capacities needed for the energy transition workforce.

Renewable Energy for Education

- Promotion of renewable energy use within educational institutions.



ENERGY TRANSITION  
EDUCATION NETWORK

# ETEN Focus Areas

- Develop and share curriculum and teaching resources
- Exchange and promote best practices in renewable energy learning
- Building the capacity of educators
- Contribute to analytical activities on skills gaps and priorities
- Make policy recommendations
- Engage in high-level awareness raising of the need for enhanced education for the energy transition
- Enhance and build on ongoing efforts of members

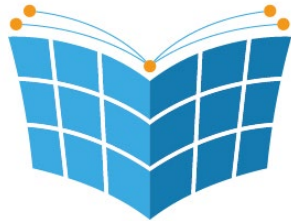


ENERGY TRANSITION  
EDUCATION NETWORK



 IRENA  
International Renewable Energy Agency

# ETEN Founding Partners



ENERGY TRANSITION  
EDUCATION NETWORK



PERMANENT MISSION OF THE  
UNITED ARAB EMIRATES  
INTERNATIONAL RENEWABLE  
ENERGY AGENCY (IRENA)



البعثة الدائمة  
الإمارات العربية المتحدة  
الوكالة الدولية للطاقة  
المتجددة (إيرينا)



**Teach For All**  
A Global Network



Higher  
Education  
Sustainability  
Initiative

**HESI+10**  
Celebrating 10 years  
with Higher Educator  
Sustainability Impact



unicef  for every child

# Joining the Energy Transition Education Network

**Network membership is open to organizations, educational institutions, governments, and community-based organisations.**

**The level of engagement can vary. Members can:**

- Actively contribute to working groups around selected activities or topics
- Contribute curriculum and teaching resources to the ETEN repository
- Share tools and good practices in renewable energy education
- Participate in knowledge exchange opportunities

[education@irena.org](mailto:education@irena.org)



ENERGY TRANSITION  
EDUCATION NETWORK





ENERGY TRANSITION  
EDUCATION NETWORK

Thank you!

[selsayed@irena.org](mailto:selsayed@irena.org)





# European Commission initiatives on green skills

Clean Energy Transitions: Workforce, Policies, and Implementation Strategies to Ensure Justice, Equity, Diversity and Inclusion (JEDI)

06 December 2022

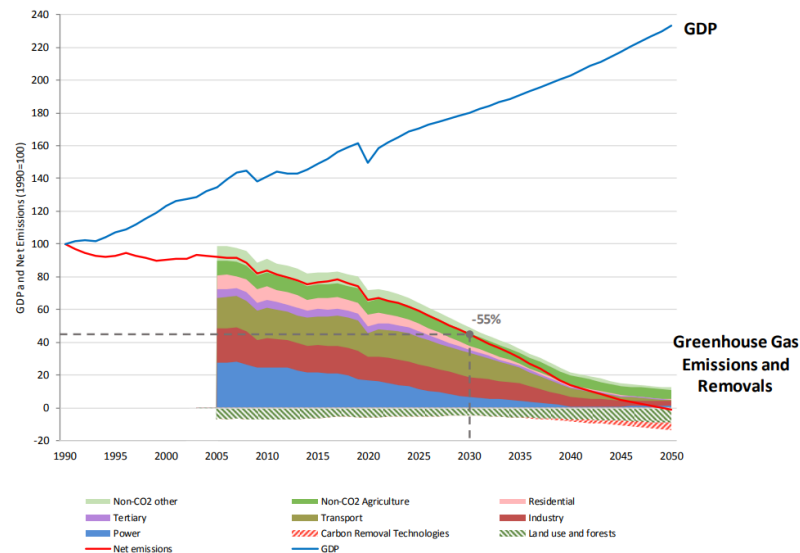
Pablo Jacome Alvarez  
European Commission  
EMPL/F3 Fair Green and Digital Transitions, Research



# Policy background context

# EU's raised climate ambition

- Climate neutrality by 2050: European Green Deal (2019), EU Long-Term Strategy to UNFCCC (2020) under Paris Agreement
- The European Climate Law, signed by MS and Parliament in June 2021, sets out:
  - Climate neutrality in the Union by 2050 as a legally binding objective
  - A 2030 target to reduce GHG emissions by at least 55% compared to 1990 levels
- Globally, national net zero pledges increased rapidly in 2020 and 2021 in run-up to COP26; Jut Transition Declarations at COP-24 and -26



Source: Stepping up Europe's 2030 climate ambition, COM(2020) 562 final, 17.9.2020



We are too dependent on Russian fossil fuels. We must ensure a reliable, secure and affordable supply of energy to European consumers. With the [#EUGreenDeal](#), we know how to get there. But we need to move faster. This is what RePowerEU is about.



Source: President von der Leyen  
[Twitter 8 March 2022](#)

# Skills for the fair green transition

# Skills for the green transition

## Technical skills

Labour market oriented

Occupation/sector specific

Example: to perform a feasibility study on solar heating

## Transversal skills

Labour market oriented

Cross-sectoral

Example: Science, Technology, Engineering, and Math (STEM) skills

## Citizenship skills

Society oriented

All-encompassing

Example: Environmental awareness

# Taxonomy of skills for the green transition

- Novelty as part of the European Classification of Occupations, Skills and Competences ([ESCO](#)).
- **571 ESCO skills and knowledge concepts** labelled as green, including:
  - 381 skills;
  - 185 knowledge concepts; and
  - 5 transversal skills.

# Recovery and Resilience Facility (RRF)

- Green skills and jobs are part of the RRF contribution to the green transition (**pillar 1**).
- RRFs include reforms related to green skills and green jobs (**EUR 1.5 billion**).
- They cover:
  - Investments contributing to **reskilling and upskilling** initiatives.
  - Reforms on developing and implementing new targeted active employment policy measures for the needs of the green transition. These include employment support, **educational policies** and further active labour market policies.

# European Year of Skills - 2023

- Upskilling and reskilling
- Skills relevant for the fair green transition
- Aspirations <-> opportunities
- Third countries workforce
- Skills intelligence tools and mapping instruments





# Supporting documents

Cedefop (2019): **Skills for green jobs: 2018 update - European synthesis report**, URL: <https://www.cedefop.europa.eu/en/publications/3078>

Cedefop (2021):, **The green employment and skills transformation - Insights from a European Green Deal skills forecast scenario**, URL: [https://www.cedefop.europa.eu/files/4206\\_en.pdf](https://www.cedefop.europa.eu/files/4206_en.pdf)

Cedefop (2022): **Apprenticeships for greener economies and societies**, URL: [https://www.cedefop.europa.eu/files/3091\\_en\\_0.pdf](https://www.cedefop.europa.eu/files/3091_en_0.pdf)

Eurofound (2021): **Tackling labour shortages in EU Member States** (Chapters linked to a climate-neutral future and the European Green Deal), URL: [https://www.eurofound.europa.eu/sites/default/files/ef\\_publication/field\\_ef\\_document/ef21006en.pdf](https://www.eurofound.europa.eu/sites/default/files/ef_publication/field_ef_document/ef21006en.pdf)

European Commission (2019): **ESDE 2019** (Chapter 5: Towards a greener future: employment and social impacts of climate change policies), URL: <https://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8219>

European Commission (2021): **The future of jobs is green** (foresight study), URL: <https://publications.jrc.ec.europa.eu/repository/handle/JRC126047>

European Network of Public Employment Services (2021): **Greening of the labour market - Impacts for the Public Employment Services : small scale study**, URL: <https://op.europa.eu/en/publication-detail/-/publication/a5ce471b-f0dd-11eb-a71c-01aa75ed71a1/language-en>

International Labour Office (2019): **Skills for a greener future: A global view based on 32 country studies**, URL: [https://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/documents/publication/wcms\\_732214.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_732214.pdf)

OECD (2012): **The jobs potential of a shift towards a low-carbon economy**, URL: <https://www.oecd.org/els/emp/50503551.pdf>

# Thank you

Frank Siebern-Thomas

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Pablo JACOME ALVAREZ

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# **STUDENT ENERGY CAREER TRAINING**

STUDENTENERGY

# INTRODUCTION

**About SE:** Student Energy is building the next generation of energy leaders with 50,00 youth in 120 countries.

## **About SECT**

SE Career Training is a 4-month cohort-based program aimed at young people between the ages of 18 and 30 who are interested in pursuing a career that advances the energy transition.

The goal of SE Career Training is to provide students in our cohort with the technical and soft skills necessary for them to land an internship or entry-level role in the energy sector.

# SE CAREER TRAINING CURRICULUM



## General Curriculum

- Energy Systems 101
- Model Thinking
- Energy Career Paths
- Project Management

## Specialized Curriculum

- Energy Policy and Market Analysis
- Project Development and Finance

# SE CAREER TRAINING PROJECT PARTNERS

- Partners in the 2nd Cohort: :

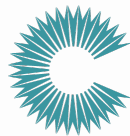
1. **The Enel Foundation:** an Italian non-profit organization promoted and financed by Enel S.p.A.
2. **Power for All:** an international non-profit they have focused on growing the market for distributed renewable energy (DRE) to end energy poverty.
3. **Sustainable Energy for All (SEforALL):** an international organization that works in partnership with the United Nations and leaders in government, the private sector, financial institutions, civil society and philanthropies to drive faster action towards the achievement of Sustainable Development Goal 7 (SDG7).
4. **Greentown Labs:** the largest climate tech incubator in North America that aims to be a supportive, collaborative, and an inspiring community for early-stage entrepreneurs to grow their businesses.
5. **Pressure Corp:** located in Houston, Texas and provides industrial facilities the ability to monetize their waste pressure by transforming this resource into turnkey clean energy. (Updated)
6. **Celium:** a US-based venture studio designed to jump-start and accelerate energy developers focused on deploying climate infrastructure solutions at scale.



**Greentown Labs**



**Pressure Corp**



**Celium**



SUSTAINABLE  
ENERGY  
FOR ALL

STUDENTENERGY

# Science Community Partnerships

Raj Pandya  
*American Geophysical Union*

*6 December 2022*

# Community Science

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- Communities and Scientists Co-creating
- Three Fundamental Principles
  - Begins with community priorities
  - End with community impact
  - Science as a human right



# Thriving Earth Exchange

- **Community Leader signs up for free**
- Trained fellow co-designs project and recruits good & relevant scientists
  - AGU has a network of 150,000 Earth Scientists
- Projects managed to outcome in 2 years



# Thriving Earth Exchange

**243** Projects

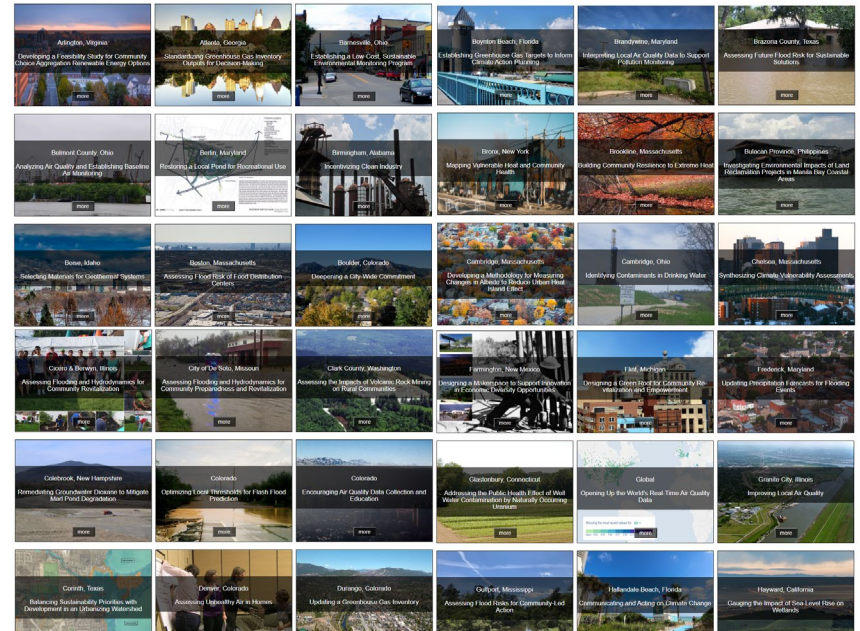
**555** Community Leaders

**375** Volunteer Scientists

**137** Fellows

**11** Countries

**42** U.S. States



# Clean Energy Transitions

- Some community members have little familiarity with energy topics because those topics feel removed from daily life
- More time and energy from residents adds to disproportionate burdens: challenged environments, heavy workloads, persistent injustices
- Assumption that residents' hierarchy of needs means they do care about longer terms concerns is an excuse for neglecting community engagement.

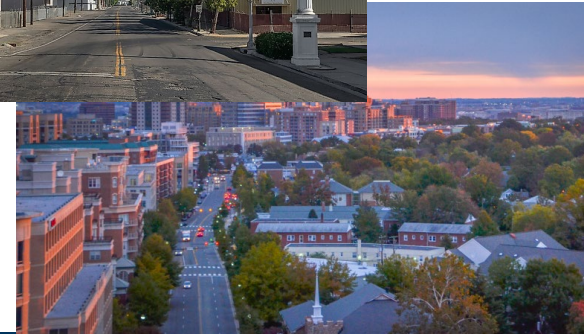


Tyonek

Fresno



Arlington



**Thank you!**

[rpandya@agu.org](mailto:rpandya@agu.org) – [thrivingearthexchange.org](http://thrivingearthexchange.org)

# SolarWorks Project

## Jobs, education, inclusion

Author: Daniel Dang, Director Business Development  
*Organization: SolarPower Europe*

*Date: 6 December 2022*

# How it all started...



- Solar could create up to **4 million jobs by 2050 in Europe**
- First step in 2021: **create awareness** of job opportunities in solar and show the solar industry as an attractive sector to work in
- **Launch of #SolarWorks** video project together with Grow with Google (Google's skills initiative)
- Inspire our audience with **motivational videos** in 5 growing EU solar markets (FR, NL, SP, PL & GE)
- Visit the [website](#) and watch the [videos](#)

→ Remaining bottleneck: connect people to the jobs and fill the skills gap



# First online SolarWorks Job Fair – 1 Dec 2022

- Why work in solar?

**#SolarWorksFair**

- What skills are needed for the energy transition?
- Diversity and best practices?
- Launch of the SolarWorks Platform

~500 registered participants  
50%+ job seekers!

# SolarWorks Platform

200+ jobs on launch day!

## Connecting people to education + jobs future solar workers

individual profile listing skills and job preferences

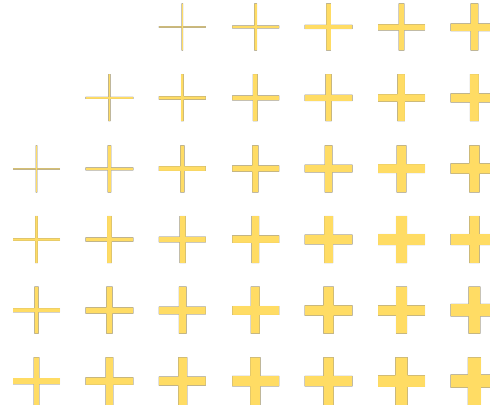


### trainings

educational institutions:  
companies, universities,  
vocational training, ...

### solar companies

listing job openings  
and needed skills



- ⇒ The algorithm **matches the skills** of job seekers with the necessary job skills
- ⇒ If additional skills are needed, **relevant trainings are proposed**
- ⇒ **Target audience:** students, graduates, people working in other sectors and people without a university degree



solarworksplatform.org

# Find the perfect job in solar industry

Call to action >

## Jobseeker?

Tell us more about you and find the perfect job

Choose a job family

Find the perfect job

## Company?

## Educational partner?

# Thank you!

Contact: Daniel Dang, [d.dang@solarpowereurope.org](mailto:d.dang@solarpowereurope.org)

# Skills for clean energy transitions

Olga Strietska-Illina,  
Senior Skills and Employability Specialist,  
Area Lead "Skills Strategies for Future Labour Markets",  
ILO, Geneva

6 December 2022

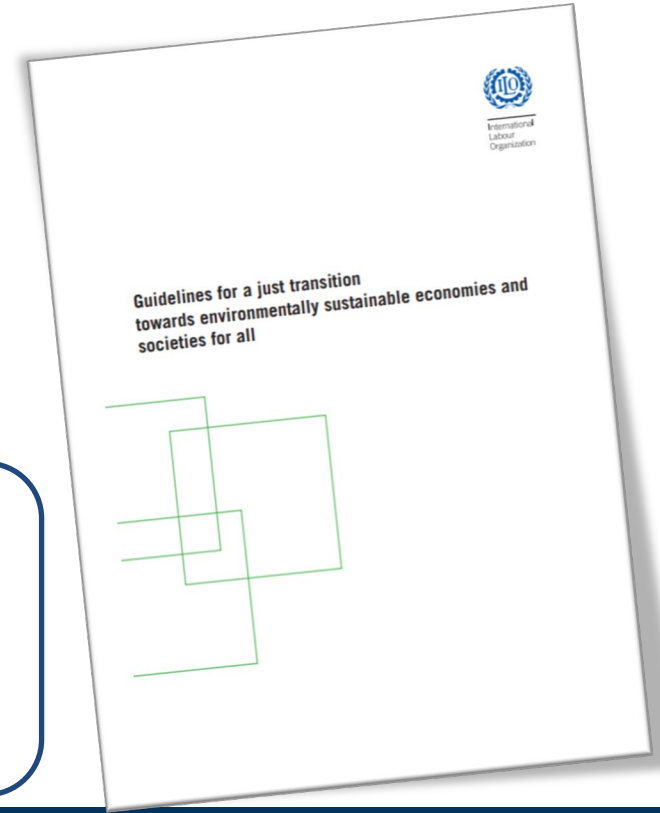
# ILO Just Transition Framework

In 2015, the ILO adopted the policy **guidelines for a just transition** towards environmentally sustainable economies and societies for all.



## **Skills development & ALMPs**

Key policy areas to address the environmental, economic and social sustainability.



# Investment in reskilling and upskilling is crucial for clean energy transitions

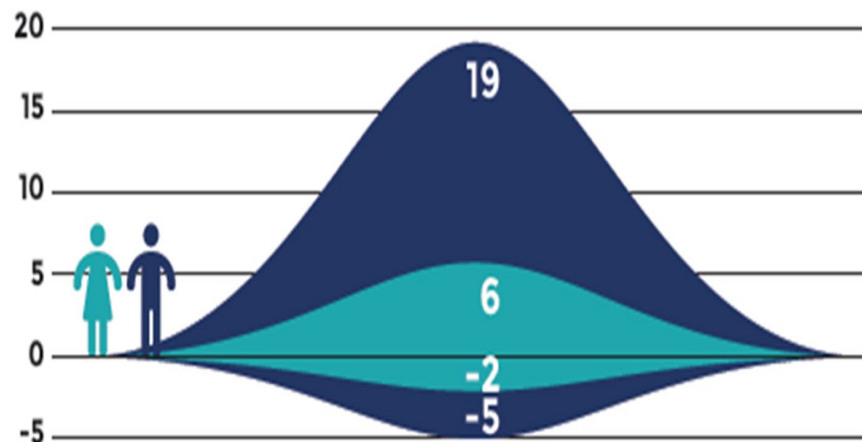
## ▶ Energy sustainability scenario, 2030

### Potential job growth



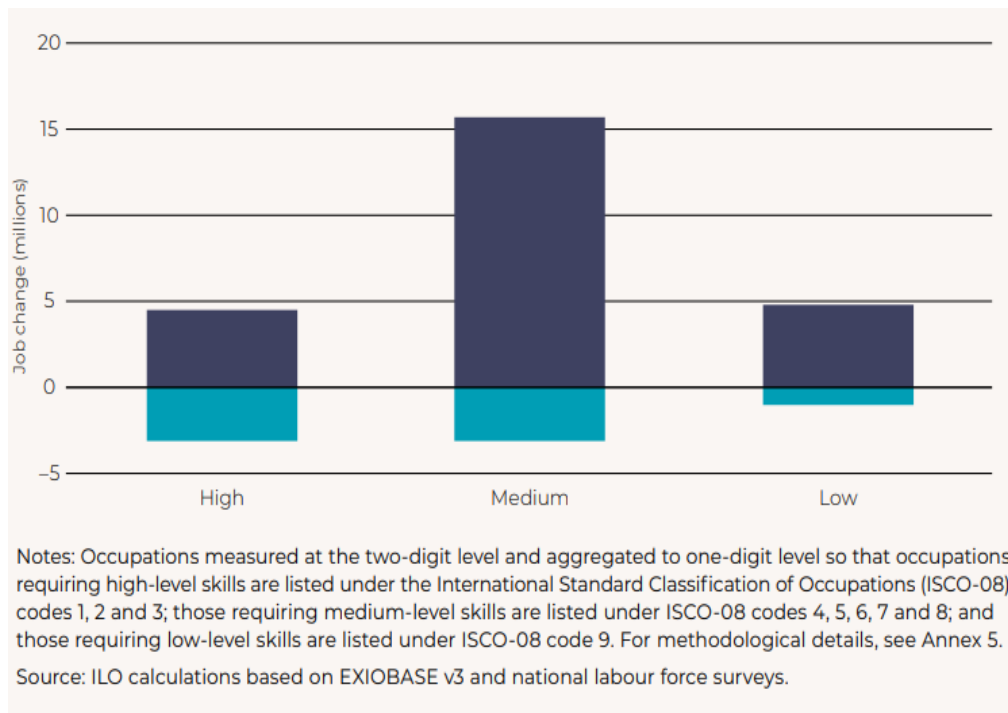
## ▶ Gender outlook, 2030

### Job change by gender



Sources: ILO (2019) Skills for a Greener Future: A global view

# The green transition will have greatest effect in mid-skill occupations



Sources: ILO (2019) Skills for a Greener Future: A global view

# Greening TVET and skills development: A practical guidance tool

## 'How-to' guidance contents

- ▶ Key learning points
- ▶ Knowledge or 'theory' component
- ▶ **Self-assessment** tools
- ▶ Inspiring practical **examples**
- ▶ **Hints and tips**
- ▶ **Checklists**
- ▶ Links to **useful resources**



# Piloting experience

## Piloting countries (2021-2022)

### ▶ Specific support measures

- ✓ Ghana (sector skills bodies)
- ✓ Zimbabwe (ToT & TVET action plan development)
- ✓ Zambia (assessment of greening priorities at a Regional Training Centre)

### ▶ Coaching programmes

- ✓ Cambodia
- ✓ Thailand
- ✓ Philippines

## Benefits of the tool

- ▶ Both learning and action-oriented
- ▶ Flexible: can be used on its own or with coaching
- ▶ Process-oriented approach: a journey rather than a destination
- ▶ Normative, holistic (relevant to all jobs), inclusive, deals systematically with all TVET elements



# ILO knowledge products and tools on skills for a greener future



# Thank you!

[strietska-ilina@ilo.org](mailto:strietska-ilina@ilo.org)

ILO SKILLS - <https://www.ilo.org/skills>

Global KSP - <https://www.skillsforemployment.org/skpEng>

# Discussion and Q&A

*Please use the Q&A feature to ask questions and ensure your question is answered. You can find this feature in your toolbar.*

**Thank you to our presenters and  
to all attendees!**

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- Clean Energy Solutions Center:
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