EEAC 30th anniversary

PARALLEL SESSION #3
11:00-12:45

GREEN TRANSITION AND WORK: CONTRIBUTING SKILLS AND ADAPTING TO CLIMATE CHANGE

Claudia Narocki
Madrid Insituto Sindical de Trabajo Ambiente y Salud

Gabriela Dragan
Romanian Consultative Council for Sustainable Development

Olli-Pekka Kuusela
ETLA Economic Research

Jukka Leskelä
Finnish Energy

Antti Palola
The Finnish Confederation of Professionals STTK

Anna-Maria Teperi
Finnish Institute of Occupational Health

Moderator: Prof. Hannele Korhonen
Finnish Climate Change Panel

#EEAC30
#CriticalDecade

EEAC

KESTÄVYYS PANEELI

SUOMEN LUONTO PANEELI

SUOMEN ILMASTOPANEELI
The Finnish Climate Change Panel

EEAC 30th anniversary

GREEN TRANSITION AND WORK: CONTRIBUTING SKILLS AND ADAPTING TO CLIMATE CHANGE

11:05-11.35 **Claudia Narocki**
Madrid Insituto Sindical de Trabajo Ambiente y Salud

11:35-11:45 **Olli-Pekka Kuusela**
ETLA Economic Research

11:45-12:00 **Gabriela Dragan**
Romanian Consultative Council for Sustainable Development

12:00-12:45 **Panel discussion**
Moderated by Hannele Korhonen

Anna-Maria Teperi
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The Finnish Climate Change Panel

Session 'Green transition and work – contributing skills and adapting to climate change'

14 September 2022

The Impact of Heat and Heatwaves on Workers' Health, Safety and Wellbeing and on Social Inequalities

Claudia Narocki

ISTAS
INSTITUTO SINDICAL DE TRABAJO, AMBIENTE y SALUD

F1ºM
FUNDACIÓN PRIMERO DE MAYO

Why adaptation policies should focus on the OHS impacts of heat events?

Heat stress is an escalating problem for the health, safety and well-being of European workers and European societies.

Occupational heat stress → not only environmental conditions.

Occupational heat stress refers to the **working conditions** that create a net **heat load** on exposed workers, resulting from the combined contributions of

- environmental factors (**temperature + humidity + thermal radiation, air movement**),
- metabolic heat (**exertion**):
- clothing worn (PPE or clothing which hinders the dissipation of body heat)

Those conditions can lead to **an increase in heat storage in the body**.

Increased diversity of occupations jobs/tasks potentially exposed to heat stress

- workplaces now being affected as a result of the extension of the summer period (example in Spain: schools)
- work near or in heated vehicles or machines.
- work in hot micro-climates, affected by heat island
- work undersun radiation:
  - newly occupations as delivery on bicycles; turism, free time and leisure monitors; personnel installing temporary facilities such as venues for events; etc.
  - “unpostponable” activities, as maintenance or repair of technological infrastructure, emergency response, police, surveillance and security tasks, etc.
- Intensification of the pace of work associated with labour management practices or payment systems,
- growing demand to use of PPE against other hazards.

Heat stress leads to heat strain

A very costly bodily response that should be avoided or controlled

A physiological response to the heat load (external or internal) experienced by a person, in which the body attempts to increase heat loss to the environment in order to maintain a stable body temperature.

Can lead to occupational illnesses including heat stroke, heat exhaustion, heat syncope, heat cramps, heat rashes, or death.

Can be topped by dehydration

The intensity or the repetition of this process makes the health consequences more severe.

Heat strain creates additional security hazards, increasing the risk of injuries

- sweaty palms,
- fogged-up safety glasses,
- dizziness,
- reduced brain function affecting the reasoning ability and perception
- burns, may occur as a result of contact with hot surfaces, steam, or fire.
- reduction of the effectiveness or the applicability of other preventive measures, such as PPE, etc.
- etc.

Research shows that accident rates

- **rises during hot episodes for the entire population**
- **and a clear rise in occupational injuries rates.**

Other negative impacts of long term exposure

Higher impact of contaminants:

- inhaled toxicants are more easily introduced into the body - increase in the rate of absorption
- heat increases toxicity
- Reduction of the effectiveness or the applicability of PPE.

Research shows:

- Long term health impairment: heat exposure leads to a wide variety of renal, cardiovascular and respiratory illnesses, etc.
- Disruption to reproductive health
  - Reduction of fertility (male and female)
  - Impact on pregnancy and fœtal development.

- Impairment of human performance:
  - Reduction of wellbeing
  - Psychosocial issues: impairment of interpersonal relations.
  - Reduction of productivity

- And so,
  - Social impoverishment - loss of productivity
  - Deepening of social inequalities.

Weather information does not reflect the workplace' or local environmental variables

Workers are often affected by additional environmental factors in the workplace or in the surrounding area

- **Radiant heat**
  - emitted by heated vehicles or machinery.
  - by sun radiation
  - higher in sunny slopes, in rural areas
  - In urban areas, the "heat island" effect and microclimate zones.
- **Humidity** can be much higher by work process o microlocal conditions, as greenhouses

Heat action plans, have to be part of preventive management

General Duty of the framework directive (and the Workplaces Directive for some cases): employers have to manage any risk if a negative impact is foreseen, preparing a preventive or adaptive response.

A written ACTION PLAN should contain all the preparations needed to face any different level of weather related risk, with anticipation, **elaborated with workers reps participation.**

As exposure to heat stress is often topped on **other OHS hazards, exacerbating them or creating new ones,**

The focus of OHS management of heat events should

- **go beyond protection from heat related illnesses** - all the OHS hazards - The reality, today: only for some occupations and jobs preventive management is focused on comfort.
- **should take into account all the heat stress factors (all the ambiental variables + exertion and PPE).**

While research is unveiling the wide diversity of negative impacts of heat…

Only certain occupations are protected by **preventive management:**

- for other occupations, the harshness of working conditions during heat events tends still to be considered outside the reach of preventive management, or are focused only in the prevention of heat illnesses.

Occupational heat stress reflects and reinforces social inequalities

Heat stress is a occupational hazard that is regularly suffered by the most vulnerable workers

- workers in manual, jobs requiring physical exertion
- low income occupations
- work done mostly under the sun radiation.

The likelihood of being exposed to occupational heat stress reflects pre existing social inequalities.

In polarised societies, those occupations most exposed to heat stress tend to be occupied by the most vulnerable groups.

Heat-related illnesses and/or traumatic injuries, reinforce inequalities.

Heat exposures impoverishes societies and deepens social polarization

Slowing down, taking more pauses, are very effective ways to reduce the heat strain. But also cause ….

For societies: loss of working hours, decreased production output, reduced quality of products and services.

For workers with daily production targets or who are paid on the basis of output,

- reductions of income
- workers are pushed to work longer work days,
  - increasing exposures → more health impairment.

Lack of preventive management >> workers have to rely on "self care behaviour"

Workers ability to reduce heat stress exposure is inhibited as long as they work in…

+ precarious situations
+ without trade union representation in the workplace,
+ weak or absent OHS management
+ intensification of work,
+ piecework payment
  + being part of a vulnerable group (such as undocumented inmigrants)
  + etc.

Workers, especially in some occupations, are exposed to serious or imminent risks:

- are being pushed to work beyond their safe thermal limits → suffer heat strain

Social vulnerability leads to inhibition of self care behaviour!

Example of contents of a Heat Plan

- **Engineering measures**, increasing ventilation, bringing in cooler outside air, reducing the hot temperature of a radiant heat source, shielding the worker, using air conditioning equipment / cooling facilities for resting, for any task position.
- **Work practices** to limit exposure time or heat strain (e.g., work/rest schedules).
  - reducing metabolic heat load: reducing work overloads by adequate staffing, etc.
  - Enhancing heat tolerance (e.g., acclimatization): attention to **individuals heat tolerance**: temporary workers and workers returning from extended leave (> than two weeks) are at increased risk.

Example of contents of a Heat Plan (II)

- **Follow up of environmental conditions**: weather services advisory or warnings.
- Adoption of **a method to assess occupational heat stress**: assessment of local ambiental hazard level, **and total heat stress**, in the different exposed job/ task/location of work.
- **Oversight**, on a daily basis, at any worksite, throughout the workday by a responsible person and trained person to monitor the conditions and the implementation of the company's plan.
- **Training** for workers and supervisors.
- Adequate **first aid** and a protocol for summoning medical assistance in situations beyond first-aid.

For the protection of workers inoccupations and sector mostly employing vulnerable workers

Sectoral guidelines are needed, setting technical measures and work practices, to avoid or control heat strain.

Such guidelines should follow, as a minimum, the ACGIH or other technical criteria, with protective ambition.

How to introduce OHS into adaptation policies – or how can adaptation policies contribute to OHS

Adaptation policies for addressing heat as an occupational hazard in Europe

Adaptation = planned structural and policy level actions seeking the reduction of occupational exposures and the increase of workers' health protection.

→setting technical standards
→ enforcement, with special focus on the most exposed and vulnerable sectors/ workers.
→ removal of structural barriers to the improvement of OHS working conditions (such as piecework payment systems; regularization of undocumented workers, etc.).
→ support for the exertion of rights: promote visits by unions delegates for information and training

Adaptation policies for addressing heat as an occupational hazard in Europe (cont.)

Other:

→ Specific action lines in climate change adaptation policies, as heat occupational health plans; including

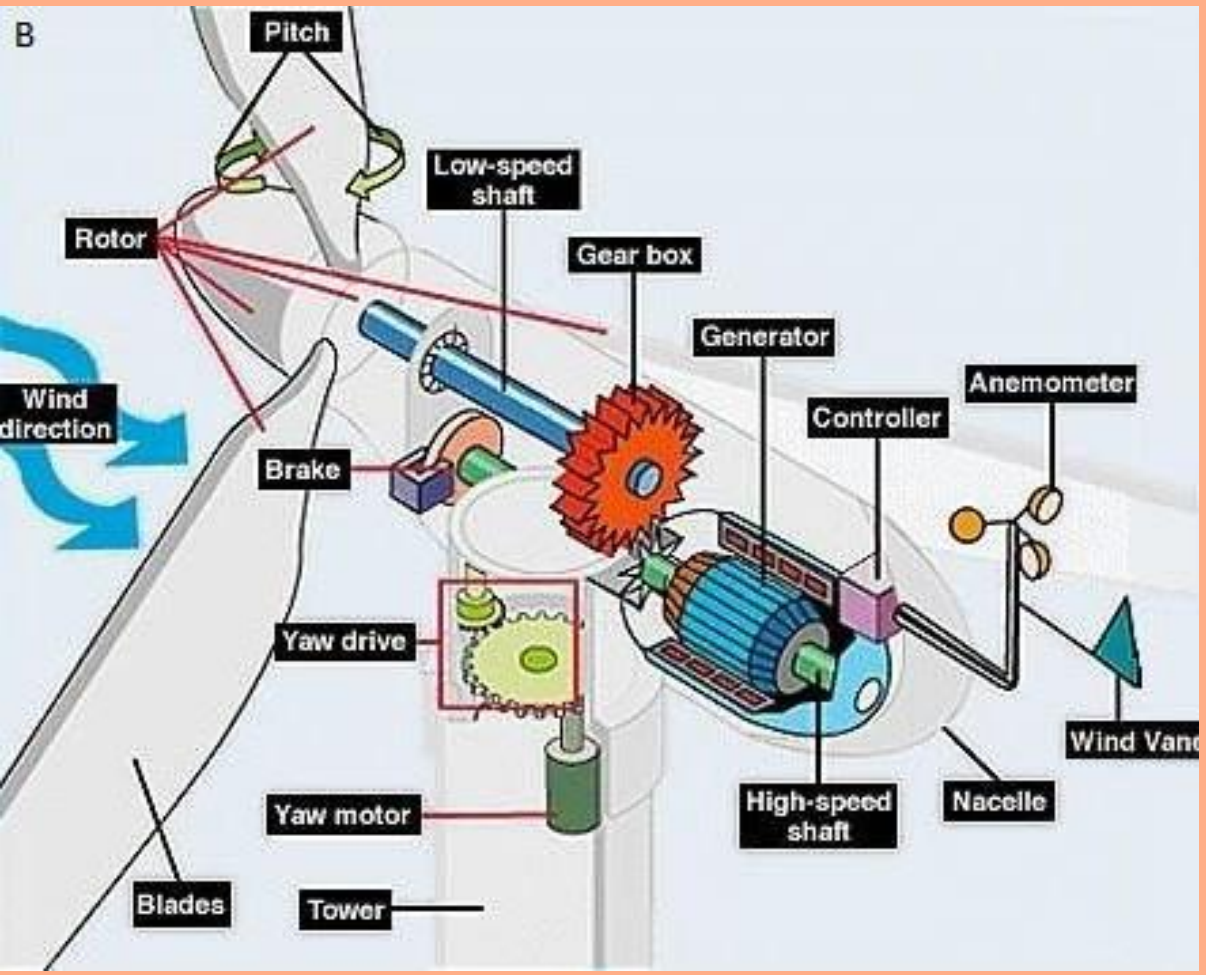
→ A specific occupational alert system.

→ Strengthening of the occupational notification and information system in order to make this hazard more visible and to reflect the real burden on workers:

- enhanced workers health surveillance, for better identification of activities with exposition, and of targets for action.
- monitoring of the impact on productivity, wellbeing and social polarization.

→ support for technical adaptation by application of Research +Development results

Example of need of technical measures: wind energy turbines should be designed to reduce heat stress and others occupational risks that demand PPE



As wind power is expanding, as a part of the decarbonisation of the EU electricity sector, operation and maintenance (O&M) workers are exposed to several factor of heat stress

"*Many of the OSH risks in the wind energy sector come from the design stage. Design is a critical stage in minimising the potential for OSH issues throughout the life cycle of wind turbines.*
With prevention through design, OSH will be incorporated into the design at the very earliest stages of a wind farm project and this will allow the 'designing out' of hazards and risks and help to prevent or minimise work-related accidents and ill health in the sector.
The industry should be designing systems to be safe, not adapting a design to make it safe."
(EU-OSHA E-FACTS-79)

A shortened list of OHS hazards in wind turbines O&M taken from risk assessments documentation

- Security hazards: work at height, electricity, rural road transport, fire, cuts, etc.
- Toxic substances are used or created. Several areas are or became confined spaces: such as nacelles, blades, rotor hub, tower, tower basement and pad mount transformer vaults, depending on the substances present, the work to be carried out, and the level of ventilation: use of solvents, flammable gases, epoxi resins, bisphenol, sulphur hexafluoride (SF6), dust (fiberglass and other), fumes, toxic gases, etc.
- Turbines contain confined spaces and spaces with short ventilation apertures, specially in newer models.
- Exposure to noise, sunlight, (UV …),

- **"Meteorological risks" are included but only to** refer to winter events: electrical and snow storms, winds, ice failing from blades, ice on rural ways, etc.
- Ergonomics and physical efforts: carrying of heavy materials, ladder climbing, static awkward postures, repetitive work, etc. **But: exertion demand was assessed as "moderate", as O/M technicians are considered "acclimatized".**
- High ambient temperatures was viewed at as a"confort issue" - (weighted out as a minor problem compared to "security", hazards), on the basis of a WBGT measurement, done during "a representative day".
- Heat stress exposure was evaluated only in relation to **PPE**: considered not a problem, and detached of global heat stress.

Heat stress hazard arises from

- Part of the towers lack lifts. Outside the continent are an option, not a requirement. Lifts do no reach the upper part.
- Nacelles can be an unbearable heated ambient: beside external ambient heat and sun radiation, the machinery is to be shutted down by the team, *in situ*.
- PPE are required for several hazards: toxicants, oxygen depletion risk; noise, security risks (falls from height, electricity, fire, ….)
- No easy exit from the nacelle and from the tower; emergency rescue is a great problem.
- No refreshed in-areas - for allowing rest and refreshment, for reduction of hyperhermia.

Figura 1. *Operario equipado con arnés, absorbedor de energía con doble elemento de amarre, dispositivo anticaída deslizante para línea de anclaje rígida, casco de seguridad, botas de seguridad, linterna frontal para zonas de baja iluminación.*

Hazards emerge also from the work organization and the business model

- O&M is an outsourced production process: after the guarantee period ends, the owner of the towers choose an "O&M" provider considering cost effectiveness, based mainly on a guarantee of highest "availability" (often of 95%)
- O&M companies operate in a globalized market - under high competitive pressures.
- Inter-regional and "global" displacements of O/M technicians. (1) Equipments installed in other countries don't meet all the EU H&S requirements. (2) Displacement poses a frequent thermal acclimation challenge for technicians.
- Some O/M technicians are working as "autonomous" personnel. So, when the ambient is extremely hot, **instead of working slower, technicians hurry up, to ensure they can finish and go out of the tower before the middle of the day.**
- **Operation and maintenance companies have limited resources to reduce the need of protective clothes /PPE, improve access, to reduce physical effort and to ease first aid, emergency aid, and to set rescue provisions.**

Thank you for yourattention!!!

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VISIOS – Education, Employment and Skills for Green Transition

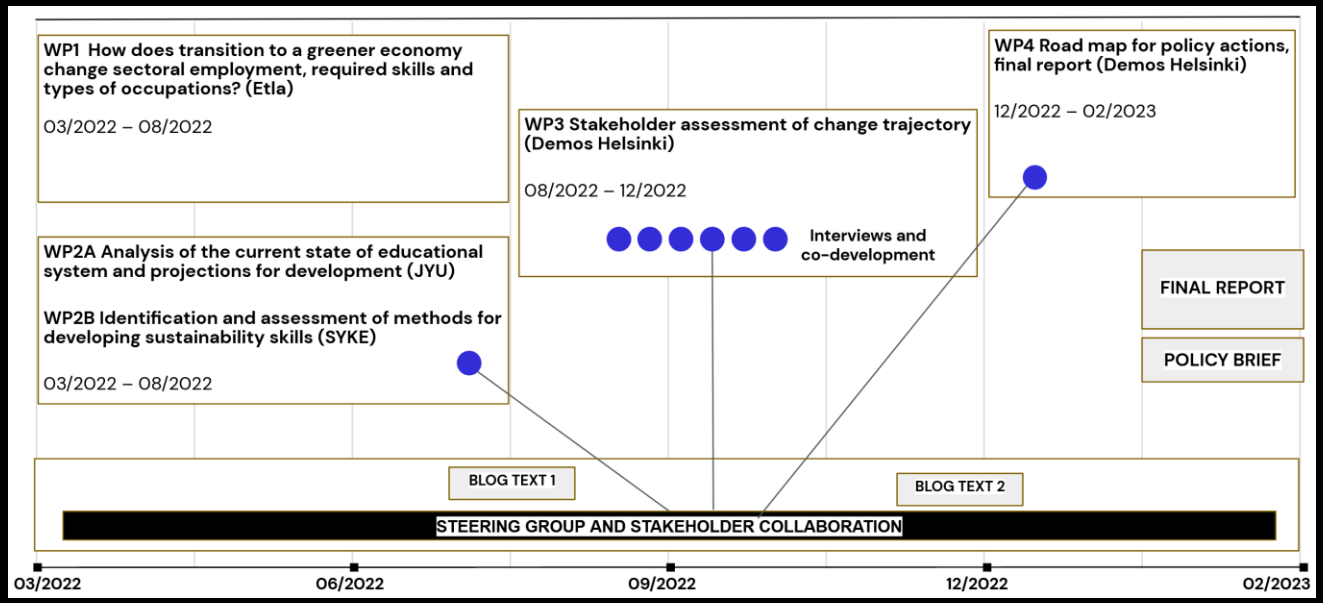
Presenter: Olli-Pekka Kuusela (Etla Economic Research)

Project Partners and Funding

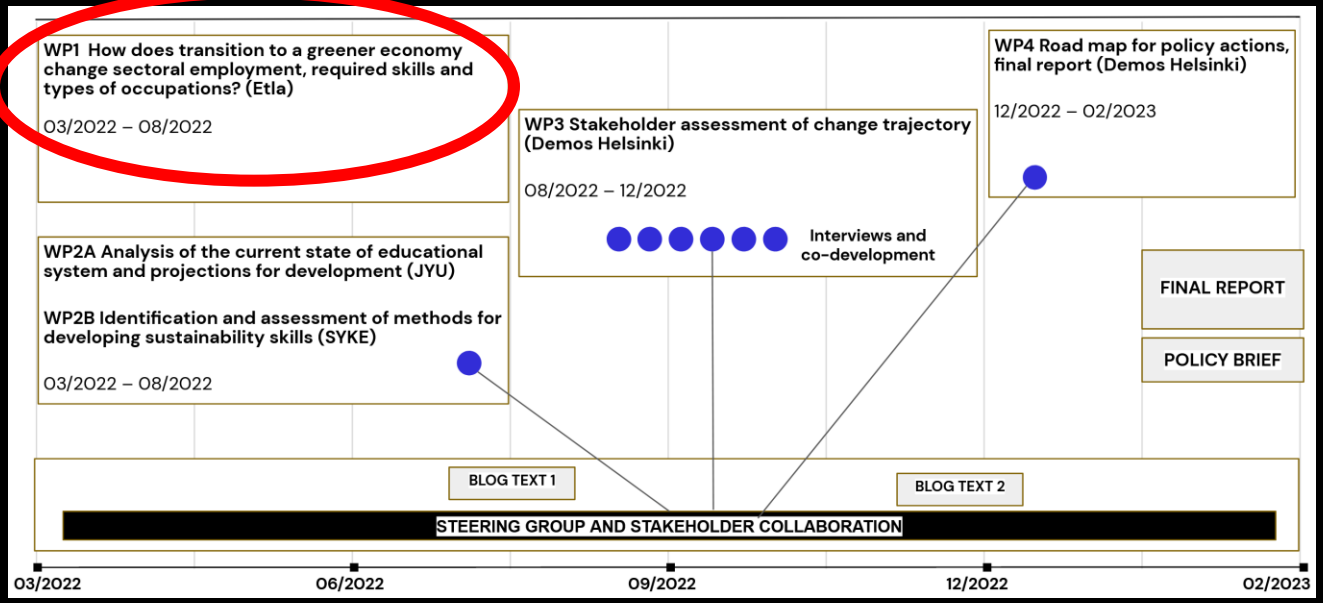
1. Project Partners
   - Demos Helsinki (lead)
   - Etla Economic Research
   - The Finnish Environment Institute (SYKE)
   - University of Jyväskylä

2. Funded by Government's Analysis, Assessment and Research Activities (VN TEAS)
   - "The joint analysis, assessment and research activities (VN TEAS), coordinated by the Government, generate information that supports decision making procedures, working practices and management by knowledge." (https://tietokayttoon.fi/en/what-we-do)

Project Structure and Timeline



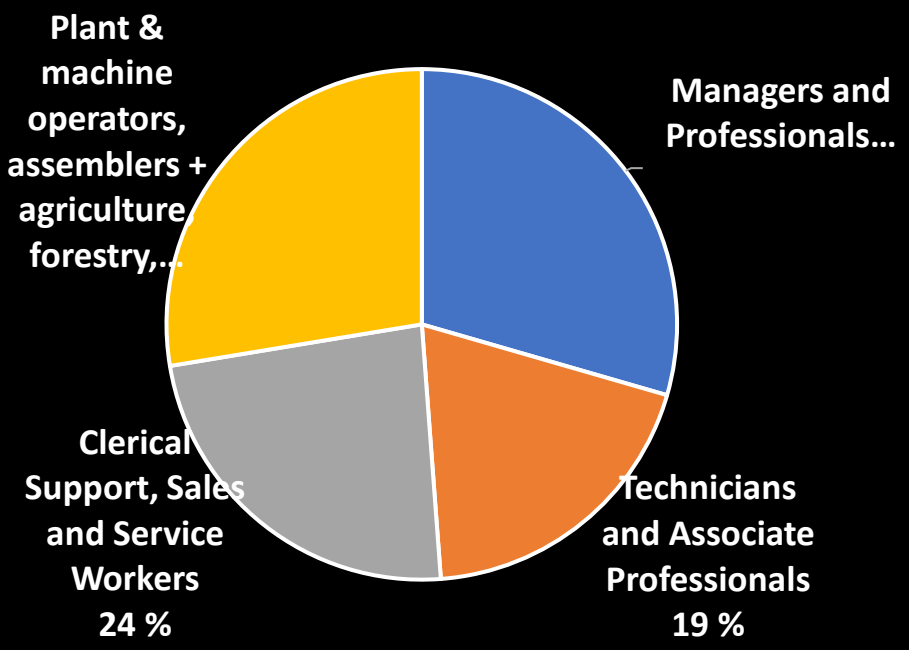
Project Structure and Timeline



Work Package 1 (Etla, SYKE)

- WP1 generates a broad outlook on the impacts of green transition on occupations, required skills, educational needs and employment in different sectors of the Finnish economy.
  - => Results from WP1 will be used in WP3 ja WP4.
- The goal is to create a synthesis of the economic aspects of the green transition by combining results from our previous modeling work with information collected from relevant literature.
- Results can be used to quantitatively assess employment changes in occupational groups and directions in required skills.

Employment by Aggregated Occupational Groups (ISCO-08) in Finland in 2019



Source: Statistics Finland

Preliminary Findings (WP1)

- During the transition period and in the long run, we observe increasing employment in clean energy production and in electricity transmission and distribution sectors. These sectors will need both higher and lower skilled workforce.
- Based on long-run economic modeling, the largest absolute changes in employment will occur in service sectors due to indirect effects from emissions reduction target. In the absence of supporting policies and/or increased productivity, the total employment effects are slightly negative due to losses in competitiveness in international markets.
- Innovations, such as clean steel production and circular systems, can support positive empoyment effects during the transition period and in the long run.
- Transition to a circular economy will generate additional employment in water and waste utilities. But the extent of these job impacts depends on the level of automation.

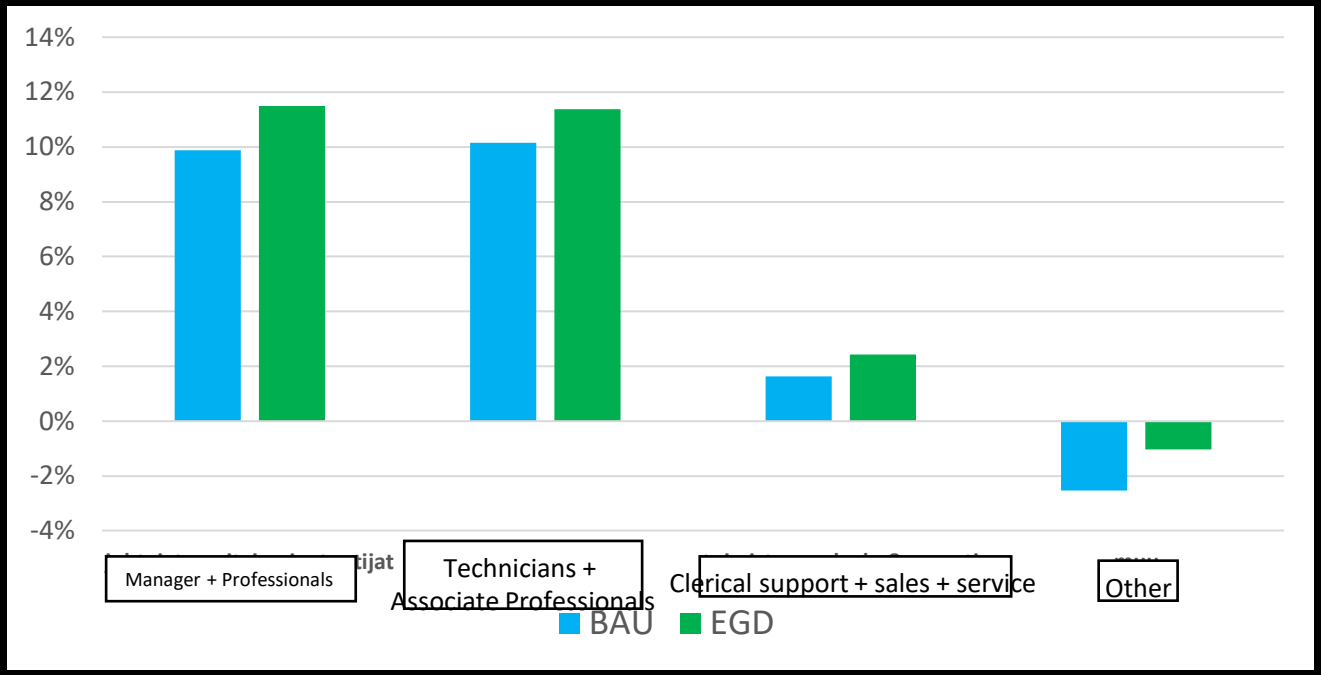
Preliminary Findings (WP1)

- During the transition period, green investments increase employment in construction, trade and services. These employment effects benefit both higher and lower skilled workers.
- In general, the types of skills required for green jobs are similar to workers' existing skills, particularly among lower skilled employees and in those jobs that are indirectly part of the green transition. The availability of skilled workforce will support the required fast pace of the transition.
- Techical and scientific skills, especially engineering skills, will be in a key role in enabling the transition. New green occupations typically require higher skills and training than comparable non-green jobs.
- Targeted re-skilling and up-skilling programs provide the best way of supporting employees to transition to green jobs and greener sectors.

European Green Deal (EGD)

- Improved energy efficiency by requiring stricter standards for new buildings and manufactured goods and with investments to renovate cooling and heating systems in existing buildings (”renovation wave”).
- In circular economy, extensive recycling and reuse of resources and components will substitute for primary resource inputs.
- To enhance the recycling and reuse of components, the design of manufactured products must take a full life-cycle approach.
- The critical areas for the application of the principles of circular economy are battery production, electronics, construction sector, packaging, plastics, textiles and the use of water and nutrients.
- Innovations in clean technologies and production systems.

EGD Model-Based Results for EU-27 (Cedefop 2021)



Source: Cedefop (2021). Note: original data aggregated by occupational groupings.

How Does Green Transition Compare to Previous Major Transformations?

- Compared to past major structural changes in the economy and labor markets, it is likely that the impacts of green transition on employment will be moderate.
- For example, the extent of reallocation of labor from emissions-intensive sectors to cleaner sectors during the next decade is likely to be significantly smaller than when labor in developed countries reallocated from industrial sectors to service sectors in a comparable amount of time (IMF 2022).
- One reason for the moderate effect is that only a small share of workers are either directly green or directly ”dirty”. Most jobs are neutral by comparison.

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From the EU Green Taxonomy to the Romania's Green Transition

Some considerations regarding the impact of the EU Green Transition on the structure of jobs in Romania

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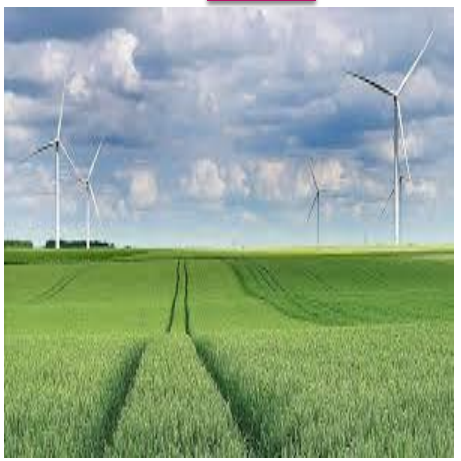
OUTLINE

- **EU Green Taxonomy – a very brief overview**
- **Romania Green Transition**
  - From Green transition to Fair Green Transition
- **Conclusions**

EU Green Taxonomy – a very brief overview

- Main **EU objective in the field of environment**: to achieve carbon neutrality by 2050 and reduce GHG emissions by at least 55% by 2030 (compared to 1990);
- **EU Taxonomy Regulation (2020/852)**, 18 June 2020 – a general framework to identify **"green" economic activities**
  - First Delegated Act, 4 June 2021; Complementary Delegated Act, 6th July 2022: gas and nuclear activity are included in the EU Green Taxonomy
- **EU Taxonomy impact both** on the way different projects are evaluated (for instance, reforms and investments included in the NRRPs were evaluated using the DNSH criterion) but also on the investment decision (public and private) **reorienting investments towards "green" activities and thus affecting the structure of the labor market**.



Green Transition in Romania

Romania's climate objectives by 2030 (National Energy-Climate Plans (NECP)

- **Reduction of emissions related to the ETS sectors** compared to 2005: -43.9%
- **Reduction of emissions related to non-ETS sectors**: -2%
- **RES contribution**: share of the RES in the gross final consumption energy: 30.75%
- **RES contribution in the electricity share**: 49.4%

RES contribution: "*In order to achieve this target, it is necessary to ensure appropriate funding from the EU in order to ensure the appropriate adequacy of the electrical networks, but also the flexibility of E-RES production through the installation of natural gas back-up capabilities, storage capabilities and the use of intelligent power grid management techniques*"
(National Energy-Climate Plans, 2021:14).

DECARBONISATION PROCESS IN ROMANIA Where we are ?

- In **2020**, Romania reached the objective of 24% of the total energy consumption coming from renewable sources.
- **For 2030**, the new objective set by the Romanian government **is 30.7%,** achievable by adding 7GW in renewable capacity.
- In 2020, **the electricity production** in Romania was 12.4% from wind energy, 3.1 %from photovoltaic solar panels and 28.1% from hydropower. In total, renewable energy production (wind, photovoltaic and biomass) represented around 16% of the total.
- Currently, **energy is still the main source of emissions, accounting for 2/3 of national greenhouse gas emissions**, followed by agriculture and industry

https://www.just-transition.info/no-plans-to-phase-out-coal-in-romania-despite-diverse-energy-mix/

Romania n Gree n Transition – electricity mix

Where we are ? Whe re we are going ?

Production of electricity by sources in 2020 (in %)

	EU	Romania
Fossil fuels	35.6	34.9
Nuclear	24.6	20.5
Hydro	13.5	28.1
Wind	14.3	12.4
Solar	5.2	3.1
Biofuels	5.8	1.0

Sources: Eurosta t

Evolution of net installed capacity in Romania (MW and %)

	2020	2025	2030
Nuclear	1300 (6.8%)	1300 (5.9%)	1975 (7.9%)
Gas	3344 (17.6%)	3177 (14.4%)	2958 (11.8%)
Coal	3240 (17.1%)	1980 (9.0%)	1980(7.9%)
Hydropower	6505 (34.3%)	7593 (34.5%)	7593(30.3%)
Solar	1362 (7.2%)	3393 (15.4%)	5054 (20.2%)
Wind	2953 (15.6%)	4334 (19.6%)	5255 (21.0%)
Total	18966 (100.00)	22003 (100.00)	25053 (100.00)

Decarbonisation process

What are we doing ?

- **New jobs in "green sectors"**
  - Decarbonised electricity system implies an important and **sustained investments in renewable sources for 2030**, meaning that the new objective set by the Romanian government **(30.7%)** is achievable by adding 7GW in renewable capacity.
  - Decarbonised electricity system implies also **new investments in "temporarily" green sectors: nuclear energy and natural gas**
- **Reducing jobs (until their disappearance) in sectors based on fossil fuels (especially coal)**
  - Decarbonised electricity system implies to **phase out most of its coal-fired generation capacity (85%) by 2025 and to fully phasing out coal by 2032**
- To achieve the ambitious climate target, investments in the decarbonisation process are mainly supported by the EU Funds (from the **Resilience Recovery Facility to other EU funds**, such as **Modernisation Fund,** the **Just Transition Fund**, etc.)

Fair Green Transition

Impact on mining and coal regions

- **Impact of the green transition on employment in fossil fuel- based sectors, in particular in the mining and coal regions**
  - **Romania's integrated national energy and climate plan (2021)** –
  - **NRRP (October 2021) -** component 6 (Energy) , **sets a tight deadline**
  - **Decarbonisation Law (OUG 108, 30.06.2022)**

- ***Hunedoara and Gorj*** *employ 90% of Romania's entire mining work force, represent some 90% of greenhouse gas (GHG) emissions caused by Romania's coal fired power plants, or approximately 30% of all Romanian GHG emissions stemming from mining and manufacturing.*
- *In the counties of* ***Dolj, Galați, Prahova and Mureș*** *a significant share of the work force is employed in fossil fuel power and heat generation or energy-intensive manufacturing and heavy industry (chemicals, metal processing cement, fertilisers, etc.). These counties generate approximately 35% of Romanian's GHG emissions stemming from mining and manufacturing.*
- ***Additional investments*** (both regions within the scope of the ***Just Transition Fund***) *are envisaged to soften the impact of the green transition and coal phase-out in the region, aiming* ***providing workers with new skills and work prospects****.*

https://ec.europa.eu/info/sites/default/files/2022-european-semester-country-report-romania_en.pdf

New green jobs in new "green sectors"

The case of the Romanian's nuclear sector

- "**Including nuclear energy in the taxonomy of the European Union** on sustainable financing is a reliable solution for **reaching Romania's energy independence and decarbonization targets**. By further developing the projects in the nuclear energy and natural gas fields, we will capitalize on the potential of our country to become an energy hub in the region, we **will develop the industry and create new jobs**," says the Prime Minister of Romania, Nicolae-Ionel Ciuca.
- Romania is planning to further invest in nuclear power, the extension of **nuclear capacity aiming to** enhance energy security and lower GHG emissions.
- Introduction **of new nuclear technology – SNR (small nuclear reactor)**, that seems to be more efficient in dealing with nuclear waste, more competitive cost per MW of installed ,capacity
- As a result of a intergovernmental agreement between Romania and US, respectively NuScale and Nuclearelectrica, at **Doicesti,** a former coal fired plant site, was chosen to explore the deployment of a SNR + the **partnership with the Polytechnic University of Bucharest,** in order to develop a Centre for the exploration of NuScale energy, which would ensure **nuclear experts, technicians and operators** in Romania

Education through "green schools"

- A "**Green School**" is a school that develops and transmits an institutional culture involved in environmental issues, that manages its resources responsibly and sustainably and that has an open attitude towards the community, establishing collaborative relationships with co-interested local actors, especially on environmental, climate and sustainability issues.
- "Green school" has **four fundamental attributes** :
  - sustainable resource management +
  - adapted curriculum +
  - participatory school +
  - open and active school
    - Source: Romanian Presidential Administration, Report on climate change and environment education, 2022 https://www.presidency.ro/ro/media/clima-si-sustenabilitate/raportul-educatia-privind-schimbarile-climatice-si-mediul-in-scoli-sustenabile

Education through "green schools"

- First "**green school**" in Romania has been opened in Buzau in 2020:
  - the largest educational unit in Buzău (School number 11) was transformed into a completely ecological institution:
    - energy independence of the school is ensured by photovoltaic panels (annually generate a total energy of approx. 32 MWh) + a multi-fraction selective waste management system + rainwater is collected and used as household water for toilets, for irrigating the school greenhouse and as a reserve in case of fire;
    - teaching staff want to introduce a new subject of study for students, the Circular Economy (currently, Botany classes also include lessons on the environment, climate change, circular economy)
    - a system of selective waste management has also been implemented, which will help both the children's education and saving the school budget
      - https://dezvoltaredurabila.gov.ro/prima-scoala-circulara-din-romania-si-uniunea-europeana-model-de-buna-practica-pentru-educatie-in-spiritul-dezvoltarii-durabile-laszlo-borbely-76-dintre-romani-traiesc-in-orase-sau-zone-periurbane
- The **Romania's recovery and resilience plan (RRP)** sets out key elements for a **fair green transition** including in the **educational field**:
  - This includes building a network of "**green schools**" (ensuring a balance between rural and urban areas), 10 integrated campuses for vocational education and training, the purchase of green minibuses, etc.
    - https://ec.europa.eu/info/sites/default/files/2022-european-semester-country-report-romania_en.pdf

CONCLUSIONS

1. Romania's **green transition towards a green economy** need to shift to zero-carbon practices, and new jobs must be developed; in this process, **upskilling and reskilling people for the green transition** is crucial.
   - Employers should also invest **in green upskilling and reskilling** their workforce, while individuals, too, need to **adopt a proactive approach** towards lifelong learning.
2. To become an **attractive destination for investments in green economy and to create green jobs**, **Romania should progressively become a regionally important user of such technologies**, in line with its strategic priorities (see the case of the SNR technology, Doicesti, etc)
3. Several **European Funds could** contribute to facilitating the green transition in Romania, mitigating its overall impact on less favored regions and social categories but there is still a long way to go, given the Romanian's absorption and capacity issues.

Resources

- Romania Integrated National Energy and Climate Plan 2021-2030 , https://energy.ec.europa.eu/system/files/2020-06/ro_final_necp_main_en_0.pdf
- Romania Country Report, 2022, https://ec.europa.eu/info/sites/default/files/2022-european-semester-country-report-romania_en.pdf
- Romania National Reform Programme, 2022, https://ec.europa.eu/info/sites/default/files/pnr_2022_romania_en.pdf
- Romania's Sustainable Development Strategy, https://dezvoltaredurabila.gov.ro/
- Sustainable Development Indicators in Romania (SDIR), INSE, https://insse.ro/cms/files/Web_IDD_BD_en/index.htm