

2 **Assessing the integration of gender equality in environmental policies and tools in Greece**

This chapter assesses the gender sensitivity of policy actions and tools prioritised under Greece’s National Energy and Climate Plan (NECP), National Action Plan against Energy Poverty, Just Transition Development Plan, National Strategy for Climate Change Adaptation, circular economy policy framework, and new biodiversity landscape. It presents interlinkages with gender equality and women’s economic empowerment, as well as examples of how other OECD countries integrate the gender-environment nexus into their own policies.

2.1. Assessing the gender-sensitivity of climate and environment-related policies in Greece

The interlinkages between climate change and gender equality are increasingly gaining attention in policy and academic debates. The differentiated impacts of climate change on women and men range from food, water and energy insecurity to being casualties of weather-related disasters (OECD, 2021^[1]). These impacts are often linked to deeply-rooted social and economic inequalities that render women and girls more vulnerable to biodiversity loss, ecosystem deterioration and decreasing water resources, especially in regions and areas where their livelihoods depend on the environment (Jerneck, 2018^[2]).

Vulnerability and exposure to environmental and climate-related risks involves multiple intersecting factors including income level, location, gender, race, and age (Djoudi et al., 2016^[3]). Impacts on social groups vary according to their resilience, ability to cope and adaptive capacity (IPCC, 2014^[4]). It is therefore essential to include gender along with other considerations when designing policies to combat climate change and environmental degradation at the national and local levels.

Gender-sensitive environmental and climate policies can also support women's economic empowerment and leadership in related activities. Identifying gender gaps in existing national policies and strategies can help spur further actions for increasing women's participation in economic sectors where their presence is limited.

Initiating a gender-sensitive approach in environmental and climate policy-making requires a comprehensive gender assessment of existing national policies and the effects of their implementation. Currently, available data from Greece on the environmental goods and services (EGSS) sector and sex-disaggregated data on labour force participation in environment-related economic activities does not allow for monitoring employment trends, evaluating policy results, forecasting, or redesigning policies for the transition to a low-carbon economy.¹ Greece is not alone in lacking this type of data: a 2019 OECD survey found that sex-disaggregated and gender-sensitive data related to member countries' environmental policies is limited. In addition, non-homogenous data makes comparing countries difficult. In the same OECD survey, gender-environment data reported by countries ranged from labour force participation in environment-related economic activities, to gender differences in energy or transport use, to health-related data on air pollution and exposure to chemicals and harmful substances (OECD, 2020^[5]).

The Greek National Energy and Climate Plan (NECP), endorsed in December 2019, integrates climate objectives and energy planning up to 2030, with a particular focus on energy-related sectors and climate change mitigation and adaptation policies (MoEE, 2019^[6]). It serves as an umbrella framework for specialised strategies and action plans that craft in more detail national policy measures planned for the coming years. The NECP's ambitious national targets are in line with the Paris Agreement (OECD, 2020^[7]), and are reconfirmed in Greece's recently adopted national Climate Law (Box 2.1).

Box 2.1. Greece's first Climate Law

In May 2022, Greece adopted its first "National Climate Law – Transition to climate neutrality and climate change adaptation" (Law 4936/2022). Setting climate targets in line with the [European Climate Law](#), the law presents policies and measures to guide climate change mitigation and adaptation, and the national process for lignite phase-out, until 2050. It includes a policy framework under which climate change mitigation and adaptation strategies are to be developed at the national and regional levels, as well as a new governance structure comprising an Inter-ministerial Committee on Climate Neutrality, chaired by the Minister of Climate Crisis and Civil Protection, a National Observatory for Climate

Change Adaptation, and a Scientific Committee for Climate Change in charge of proposing mitigation and adaptation policies.

In line with the Greek National Energy and Climate Plan (NECP), the legislative framework prioritises actions for specific economic and social activities in sectors such as health, tourism, agriculture, forestry, energy, infrastructure, transport, and biodiversity and ecosystems protection. It includes the development, by 2023, of sectoral carbon budgets for the period 2026-2030 for: i) electricity production (energy and heating); ii) transport; iii) industry; iv) buildings; v) agriculture; vi) waste; and vii) land use, land use change and forestry (LULUCF).²

All national agencies and ministries will be required to introduce climate change adaptation and resilience measures in their strategic and operational programming. Under the general guidelines provided, such policy measures and actions should focus on, *inter alia*:

- reducing energy consumption and increasing energy performance in all economic sectors;
- increasing renewable energy systems (RES) coverage, based on best available technologies to avoid negative environmental impact;
- gradual phasing out of fossil fuels and substituting with RES;
- gradual phasing out of natural gas use (and phasing in of bio-methane and green hydrogen), especially in transport and industry;
- promoting electric vehicles, sustainable urban development and use of public transport;
- improving the carbon footprint of buildings and infrastructure in urban and peri-urban areas;
- reducing greenhouse gas emissions from waste management;
- increasing greenhouse gas absorption from natural ecosystems.

Specific references are made to developing green infrastructure, inter-modal transport networks and urban green spaces linked to ecosystem services, well-being and quality of life, as well as to promoting sustainable agriculture, fisheries and food production. It is noted that sustainable urban development should take into consideration environmental, social and economic planning and processes.

Climate change adaptation measures, which will be partly financed through revenues from auctioning EU ETS allowances, include diversifying local economies with a focus on sustainability and creating new jobs in regions undergoing lignite phase-out; financing the national Fair Transition Fund; introducing energy saving measures to reinforce low- and middle-income households; addressing energy poverty; and supporting the provision of services of general economic interest.

Source: (OG, 2022^[9]) (EC, n.d.^[9]).

Neither the NECP nor the Climate Law include explicit gender considerations. Social considerations within their policy categories focus mainly on vulnerable groups such as low-income households, households affected by the just transition, etc. However, the impacts of many of the proposed measures may not be gender-neutral. They may have differentiated impacts on women and men, and therefore a gender equality perspective should be included in the design and implementation of these measures.

Table 2.1 and the following sections map gender dimensions that could accompany the social considerations included in the Greek NECP and Climate Law. They take into account intersectional vulnerabilities, gender-differentiated behaviour and preferences, as well as gender inequality in decision making and economic activities.

Table 2.1. Gender dimensions of the Greek National Energy and Climate Plan and Climate Law

Environmental policy category	Social considerations	Gender dimensions
Energy supply security	Access to affordable and secure energy; tackling energy poverty	Women face lower quality of life, female single-parent families at higher risk (intersectionality)
Energy efficiency	Retrofitting buildings; upgrading residential buildings of energy-vulnerable households; promoting sustainable mobility and transport	Women's vulnerability due to energy poverty, women's more sustainable consumption patterns (e.g. women more likely to adopt energy-saving and energy-efficient solutions at home)
Low-carbon economy	Increasing RES share in electricity market; implications for local growth and employment in regions undergoing lignite phase out	Women may be excluded from measures to reduce employment loss and other negative effects in the local economy
Climate change adaptation in sectoral policies (tourism, agriculture, transport)	Sustainable agriculture practices to reduce CO ₂ and GHG emissions from the LULUCF sector	Gender-sensitive agriculture policies to increase women's participation in the sector, and to promote more sustainable practices
Spatial planning / Bioclimatic urban design	Revising the city structure and functions to be more sustainable; tackling localised phenomena such as "heat islands"	Support women's sustainable mobility patterns, consider women's needs in city planning
Research & Development (R&D)	Develop and mature technology via STEM education (research centres), start-ups etc.	Advance women's presence in green innovation to support the economy's green transformation
Circular economy	Accelerating circular economy actions to unlock growth potential, with links to small and medium-sized enterprises, social economy and technological innovation	See section 2.3

Source: Authors compilation, based on (MoEE, 2019_[6]).

2.2. Providing access to affordable and clean energy

2.2.1. Tackling women's energy poverty

Energy poverty affects women in both developed and developing countries. Its severity and impacts vary according to income level, health and quality of life (OECD, 2021_[1]). In developing countries, insufficient access to affordable and clean energy and the time spent gathering biomass fuel negatively affects women's ability to pursue income-generating activities and girls' school attendance. In more advanced economies, such as Greece, energy poverty mostly concerns affordability and efficient energy use. Women in Greece spend more time at home than men, and their energy consumption is mainly attributed to household appliance use. Therefore, women's energy usage depends on household income as well as access. Susceptibility to energy poverty further varies according to socio-spatial differentiations between individuals, households and communities (Robinson, 2019_[10]). The Greek NECP acknowledges increased levels of energy poverty as a major challenge, though no reference is made to its gender-differentiated impacts.

Vulnerable communities must often rely on polluting sources of energy. Women and girls, who often spend more time indoors due to household responsibilities, are disproportionately affected by the adverse health impacts of indoor air pollution. For example, exposure to ambient air pollution is linked to adverse impacts on fertility, pregnancy and even newborns, as per recent evidence that fine particles crossing the placenta lead to foetal exposure (Bové et al., 2019_[11]).

Energy poverty is linked to increased overall poverty and lower quality of life, both of which exacerbate tensions within households, which can be a contributing factor to gender-based violence (OECD, 2021^[11]). Women in Greece, who traditionally manage family budgets and household energy consumption, faced increased challenges from energy use reduction during the country's economic crisis, including emotional impacts (Petrova, 2017^[12]) (Petrova and Simcock, 2019^[13]).

At the same time, evidence suggests that women are more responsible users of energy than men. Analysis of selected OECD countries suggests that people with higher environmental concern are more likely to adopt energy-saving and energy-efficiency solutions at home. The same analysis indicates that men show less environmental concern compared to women, even though no correlation was found for energy saving activities (Urban and Ščasný, 2012^[14]). A 2015 Canadian study on the relationship between consumers' environmental concerns, carbon footprint and socio-economic status showed that women tend to be more environmentally concerned and engaged in pro-environmental household behaviour. Results also showed that single-parent households, usually led by women, are more likely to have a smaller carbon footprint, due to smaller house size, and limited vehicle ownership and use (Huddart Kennedy, Krahn and Krogman, 2015^[15]). In a 2020 study in the United Kingdom, women reported engaging in activities with a higher energy footprint than men, but performing them using less electricity (Grünewald and Diakonova, 2020^[16]). A 2021 Swedish study examining expenditure patterns for food, furniture and leisure showed that men spend about 2% more money than women on average, but that the GHG emissions associated with their expenditures is about 16% higher. Men tend to spend more on items such as fuel, while women's spending is concentrated on comparatively lower-emitting products and services such as health care, furnishings and clothes (Carlsson Kanyama, Nässén and Benders, 2021^[17]).

Box 2.2. Good practices: Public-private initiative for household energy efficiency in Belgium

The Papillon Project, a joint initiative of Belgian social welfare service *Samenlevingsopbouw West-Vlaanderen* and the Bosch company, enables low-income households to lease, rather than buy, energy-efficient appliances such as dishwashers, dryers and washing machines. Households that would otherwise have to rely on energy-inefficient, second-hand appliances therefore have access to more sustainable options. This type of intervention ameliorates women's household tasks and may also help to reduce feelings of guilt about their ecological footprint.

Source: (SAAMO West-Vlaanderen, n.d.^[18]).

The Greek National Action Plan against Energy Poverty, adopted in September 2021, aims at reducing energy poverty levels by 50% in 2025 and by 75% in 2030, compared to 2016 data (OG, 2021^[19]). Building upon objectives already included in the NECP, it presents a collection of additional policy measures that support more vulnerable groups.

The Action Plan presents nine actions under three policy categories (Table 2.2). They include subsidies for vulnerable households to install energy-autonomous photovoltaic systems, upgraded energy retrofitting for housing, heating subsidies and electricity bill reduction. For building retrofitting, low-income households are expected to have 75% of the cost subsidised, with the remaining 25% covered through an interest-free loans. The subsidy rate will be higher for households in regions undergoing lignite phase out, reaching 90% (SDAM, n.d.^[20]).

Table 2.2. Greek National Action Plan against Energy Poverty

Key policy categories and actions

Consumer protection	Energy efficiency and RES usage	Education and awareness-raising
Providing a preferential electricity supply tariff to protect the affected households from extreme and emergency conditions of energy poverty	Energy upgrade of residential buildings of affected households and promoting the installation of RES stations to meet their energy needs	Informing and educating affected households on how to better manage energy use and fight energy poverty, in the framework of the Energy Efficiency Obligation Regimes 2021-2030
Providing specific quantities of energy products at a preferential price to support affected households' energy consumption through an "energy card"	Provide incentives to install RES systems and energy saving technologies in affected households - Just Transition Areas	Introducing targeted information and education actions to affected households and professionals who are tasked with implementing energy saving actions
Protecting affected households through the adoption and implementation of appropriate regulatory measures (access to universal service, smart meters etc.)	Providing incentives to energy-poor households to take up energy efficiency measures - Energy Efficiency Obligation Regime	
	Revising the framework for "energy communities" to address energy poverty	

Note: Author's table, based on information provided in the Greek National Action Plan against Energy Poverty.

Source: (OG, 2021^[19]).

Policies to tackle energy poverty and improve energy efficiency should consider women's role and position within households. Providing women and women-led households with financing opportunities, both to support low-income individuals and families and to promote renewable energy consumption, could serve this purpose. For example, when introducing measures to increase installation of self-generating energy offset systems, priority could be given to households based not only on income but also type of household, dependent members etc. For single-person households, policies aimed at reducing energy poverty could also consider factors such as age, gender and location. Measures such as incentives for intergenerational home sharing, in which expenses could be divided, could also be introduced. Finally, behavioural nudging could further improve energy efficiency in households and encourage families to select renewable energy sources (OECD, 2017^[21]). Behavioural nudging further targeted to female consumers could support women in their household decision making. Based on the limited research available, women are more susceptible than men to empathy nudging as an incentive for environmental conservation, and would likely step up their environmentally conscious behaviour if financial incentives and empathy nudging were introduced (Czap et al., 2018^[22]).

Box 2.3. Good practices: Tackling women's energy poverty with EmpowerMed

The EU-funded project EmpowerMed aims to tackle energy poverty and improve the health of people in Mediterranean coastal areas. With a special focus on women, the initiative raises public awareness of energy poverty, implements practical solutions to alleviate energy pressures on households, and proposes policy recommendations. It assists more than 10 000 people in Albania, Croatia, France, Italy, Slovenia and Spain through EUR 160 000 investments in sustainable energy and EUR 780 000 of savings.

EmpowerMed collects and validates gender-disaggregated data to enable a better understanding of women's roles in addressing energy poverty. According to an EmpowerMed report, none of the

countries examined apply gender-responsive energy policies and strategies. However, Spain's social bonus (electricity discount) has recently added single-parent families as a collective in the access criteria. In Spain the majority of single-parent households are female-led.

Source: (EmpowerMed, n.d.^[23]).

An example from Spain demonstrates the importance of ongoing public dialogue on energy conservation. In Madrid, neighbourhood communities come together once a month to discuss energy efficiency, sustainable consumption and green behaviour. An NGO trains community members to become local energy agents and promote energy efficiency within their own community. Women are equally involved in this programme: the project managers consider that women are more successful than men in counselling other women to improve energy efficiency behaviour. Peer-learning has proven to be essential in energy efficiency literacy programmes, in which energy saving solutions are shared by social media, and networking events (Ayuntamiento de Madrid, 2019^[24]).

2.2.2. Increasing renewable energy share – Phasing out fossil fuel dependency

Greece has made a national commitment to phasing out fossil fuel dependency by reducing lignite mining and use in its electricity production. In line with the NECP, a Just Transition Development Plan (JTDP) was released in 2020 with a budget of over EUR 5 billion from EU and national resources. The JTDP sets an ambitious roadmap to be completed by 2028, transitioning from coal-intensive economic activities in specific regions (i.e. regions highly dependent on lignite mining and electricity production) to alternative ones based on five development pillars: clean energy; industry and trade; smart agricultural production; sustainable tourism; and technology and education. The JTDP aims to:

- guarantee jobs and create new ones;
- offset the socioeconomic effects of lignite phase-out by maintaining and strengthening the social fabric;
- ensure energy self-sufficiency for regions in transition and the country more broadly, while providing development opportunities for local economies.

Given women's employment patterns and their role in local communities, Greece's just transition is likely to have gender-differentiated effects. The shift from fossil-fuel-intensive to low-carbon economic activities will not only impact (traditionally male) workers in the industries affected, but also local economies. Women may become marginalised if not included in transition planning (Box 2.4). Analysis of the closure of the United Kingdom's coal mines in the 1980s showed that while it initially caused a 90% displacement of male workers, a secondary effect was female manufacturing workers in coal regions being crowded out as men moved into jobs previously occupied by women (Aragón, Rud and Toews, 2018^[25]).

Box 2.4. Gender Just Transition – employment opportunities for women

Gender equality in the European Commission's guidelines for just transition programmes

In September 2021, the European Commission released a Working Document to guide member states on issues to consider when developing their territorial just transition plans. Gender implications were identified, together with social exclusion and consequences to livelihoods, as impacts of the transition to climate neutrality on employment.

The European Commission calls for promoting gender equality in the transition to a climate-neutral economy by ensuring equal opportunities through women's labour market participation and entrepreneurship, and equal pay.

Source: (EC, 2021^[26]).

At the 2021 United Nations Climate Change Conference of the Parties (COP26), the United Kingdom presidency presented recommendations for governments to ensure a gender-just transition to net zero. They focus on addressing existing barriers to women's economic empowerment, incentivising business to take part in the gender-just transition, and providing a framework of education and social protection for women (Table 2.3).

Table 2.3. G7 recommendations for a gender just transition to net zero

Address underlying barriers to women's economic empowerment	• Understand the barriers faced by women through improving data collected on women in the workforce and engaging women workers, representatives and communities.
	• Increase women's access to finance and technology and financial and digital literacy.
	• Improve access to education and women's participation in STEM subjects to enable them to access new technologies and new jobs.
	• Strengthen women's land rights.
Influence and support business	• Promote women's leadership and engage and support women's organisations.
	• Promote a gender just transition to net zero, which takes a people-centred approach by including social equity in mandatory climate disclosure, e.g. Taskforce on Climate related Financial Disclosures.
	• Develop women's economic empowerment metrics and frameworks that align with business decision-making approaches and language.
	• Encourage businesses to adopt gender sensitive working practices to overcome barriers to women's participation, including flexible working, childcare support and travel provision.
	• Incentivise businesses to increase women's representation through procurement guidelines and public policies that mandate at least 30% female participation.
	• Partner with businesses to deliver up-skilling programmes for women workers, focusing on technical and managerial skills.
	• Facilitate sectoral collaboration and learning with businesses, workers and communities to identify and promote job substitution, transformation and creation.
	• Support initiatives that measure and incentivise responsible business practices including true cost accounting and socio-economic valuation and corporate benchmarking.
Provide education and social protection	• Use industrial strategies to provide clear demand signals to businesses for workforce needs.
	• Legislate for decent work and ensure companies pay decent wages, safeguard workers' freedom and protect them from harm.
	• Engage in education to support women's participation in STEM subjects.
	• Develop more comprehensive social protection schemes in countries where there is risk of job elimination.
	• Design policies that protect informal workers. Providing women greater agency over their working patterns and supporting higher participation in the labour market.

Source: (Stevenson et al., 2021^[27]).

A just transition implies equal employment opportunities for women and men. Job creation in regions affected by the transition to a low-carbon economy should be both inclusive and sustainable. Support could focus on prioritising gender-sensitive and gender-responsive financing and investment opportunities, and on gender-balanced skilling and training programmes. Lack of such support could widen the existing

employment gap between men and women, considering the lower engagement level that women start from.

Greece has already begun introducing initiatives to address unemployment in lignite-dependent regions. In 2021, a three-year, EUR 48 million programme was launched to support 3 400 former employees in businesses affected by the coal phase-out process in Western Macedonia and the Peloponnese, the two regions where lignite is mined and used for electricity production. The programme covers 100% of all labour costs for displaced workers in the energy, transport and mining sectors, and 75% for displaced workers in the wholesale and retail trade, catering and tourism sectors. The subsidy rises to 100% for women and long-term unemployed persons over 50 years of age. Employment contract duration varies from 12 to 18 months depending on the sector, with longer subsidies for those directly affected by the just transition process (OAED, 2021^[28]).

It should be acknowledged that Greece did reach its 2020 binding target on renewable energy for heating and cooling. The country still strives to meet its electricity and transport targets, however (OECD, 2020^[7]). Women's role in renewable energy is not defined in national policies, but the legal framework around "energy communities" – i.e. communities of local actors and citizens who participate in the production, distribution and supply of renewables-based energy (OECD, 2020^[7]) – is a step towards increasing women's presence in this market. Additional initiatives should be considered, for example as in the case of Germany, where legislative provisions support the participation of co-operatives in auctions for onshore wind and solar photovoltaics by setting lower tariffs for small developers. This has enabled women-led wind energy co-operatives to become active in the energy transition (OECD, 2021^[11]).

Box 2.5. Good practices: Greece's first women-led energy co-operative

WenCoop, the first female-centred social energy co-operative in Greece, aims at empowering women by engaging them in energy-related projects. Supported by the Greek Association of Women Entrepreneurs, it is managed collaboratively by 60 women entrepreneurs, with male participation limited to 5%. Women shareholders come from different entrepreneurial backgrounds, and shares may be divided to allow for access. In addition to generating income, the co-operative covers 100% of members' energy consumption. It may also provide energy, free of charge, to vulnerable groups and single-mother families in the area.

WenCoop is completing the construction of a 1MW photovoltaic park in northern Greece. A second photovoltaic park of equivalent capacity is expected to be completed by early 2023. Additional photovoltaic parks, and an expansion to electric mobility, are under consideration.

Source: (Tzanne, 2022^[29]).

2.3. Gender-sensitive climate change adaptation measures

The NECP and the National Strategy for Climate Change Adaptation (NSCCA) constitute Greece's main framework for designing climate change adaptation actions. The NSCCA focusses on economic sectors expected to be highly affected by climate change, i.e. agriculture, forestry, health, tourism, energy, infrastructure and transport, land use and spatial planning, fisheries, mining, water management and insurance. Thirteen Regional Climate Change Adaptation Plans are being finalised. Of these, less than half provide analysis of the expected social impacts of climate change to local populations, and only one makes reference to women (though without specific gender-sensitive analysis). Social impacts anticipated under the regional adaptation plans refer to an ageing population; changes in the local labour market;

cost-related implications of increasing temperatures (and associated rising energy consumption); effects on local populations of rising sea levels in coastal zones; and the need to adjust spatial planning in urban areas to align with changes in the social fabric.

2.3.1. Gender-sensitive sustainable cities

The Greek NECP acknowledges that ameliorating spatial planning and energy management at the local level would lead to containing energy consumption in urban areas, eventually reducing their carbon footprint. It also considers sustainable smart cities which utilise ICT and clean energy as a climate change adaptation measure. Investments in innovative solutions for buildings and vehicles, as well as smart meters and smart networks, are expected to enhance sustainable growth, improve quality of life, and help manage natural resources more sustainably (MoEE, 2019^[6]).

Improving city design and public transport use would support both gender equality and women's economic empowerment. Green and blue spaces in cities could help to mitigate climate change impacts such as urban 'heat island' effects and floods. Providing safe access to such spaces is highly valuable for all residents, especially so for women who spend more time in their neighbourhoods. Measures linked to reducing energy consumption and GHG emissions in social infrastructure should be carefully evaluated from a gender perspective, considering that women represent the majority of workers in the health and education sectors.³ The same applies to lighting in street and public spaces, as insufficient lighting hampers women's feeling of safety at night.

Box 2.6. Good practices: London's Women's Night Safety Charter

Forty-four percent of London residents live within five-minutes' walking distance of a park, yet two times more women than men report that safety concerns are a barrier to walking in a public space.

The Women's Night Safety Charter is part of the Mayor of London's Tackling Violence Against Women and Girls Strategy and the city's commitment to the global UN Women Safe Cities and Safe Spaces initiative. All organisations that operate at night are asked to participate by nominating an organisation champion who actively promotes women's night safety, demonstrating to staff and customers that women's night safety is taken seriously, and encouraging reporting by victims and bystanders as part of their communications campaign. Over 600 organisations, associations and companies (including local businesses) have already signed the London's Women's Night Safety Charter.

Source: (London Assembly, n.d.^[30]).

Evidence suggests that women's and men's mobility and travel preferences differ, especially as many women's family, household and professional responsibilities require shorter and multiple trips per day. Women often follow more sustainable mobility patterns than men. They show a stronger preference for public transport use and cycling, though an important concern is the fear of possible sexual harassment and abuse.

Although sex-disaggregated data is limited, evidence from OECD and EU countries indicates that women are more willing than men to reduce their car use, and are more positive towards reducing the environmental impact of travel modes (Samek Lodovici et al., 2012^[31]). In Germany for instance, 53% of public transport users are women. The worldwide share of women using public transport is 66% (Diehl and Cerny, 2021^[32]). Time spent commuting is a factor in women's employment decisions, indicating that women's economic participation is directly affected by the availability of suitable means of transport

(Nafilyan, 2019^[33]). Upgrading modes of transport most used by women could facilitate women's access to the labour market (Ng and Acker, 2018^[34]) (OECD, 2021^[1]).

Box 2.7. Good practices: Gender mainstreaming in urban planning and public transport

Umea, Sweden

The City of Umea, Sweden monitors women's and men's different use of public space, and has designed its public transport system to minimise city traffic and maximise accessibility. The city integrates a gender perspective in mobility management projects and invests in more sustainable modes of transport. In 2015, 66% of women's daily travel was marked as sustainable in Umea, compared to only 43% of men's. Umea aims to increase men's share of sustainable travel to 55%, which requires, among other measures, that men adopt travel patterns more similar to women's, or alternatively to invest in electric vehicles.

Vienna, Austria

In Vienna, Austria, gender aspects are considered at every stage of urban development. Promoting environmentally friendly means of transport and creating a safe and barrier-free city are envisioned to go hand in hand. Vienna takes into account that women are more often exposed to situations that trigger anxiety in public spaces by implementing adequate design of these spaces and adjoining buildings. Moreover, the city aims at barrier-free accessibility of public transport stops as well as barrier-free station and vehicle design. This is intended to facilitate the lives of persons with caregiving tasks such as carrying shopping bags or pushing prams; allowing them to widen their access and activity range.

Source: (OECD, 2020^[35]); (Urban Development Vienna, 2013^[36]).

2.3.2. Gender-sensitive environmental impact assessment

Greece's national Climate Law proposes that environmental licencing for works and activities include an assessment of future GHG emissions and climate change impacts, a quantitative analysis and assessment, where possible, of the effects of climate change mitigation and adaptation; and determination of any hindrance to achieving climate neutrality goals. The environmental licencing procedure also encompasses an environmental impact assessment of the local socioeconomic environment, though this is limited to expected demographic changes expected and a short description of local economic activities and employment (OG, 2014^[37]). The process also includes a public consultation on works and activities being developed (OG, 2018^[38]). Including a gender-based analysis in the environmental licencing process would help identify the effect on women's economic empowerment at the local level. Moreover, raising awareness and encouraging women-led organisations to participate in public consultations would support a more gender-balanced approach.

Better access to sustainable infrastructure (transport, energy, water, housing, social infrastructure etc.) is fundamental for enhancing women's economic empowerment and labour force participation. Guaranteeing a gender lens in the governance framework for infrastructure would provide for more inclusive and sustainable outcomes (OECD, 2021^[1]).

According to a 2020 OECD Survey on the Governance of Infrastructure, only 9 out of 31 OECD members explicitly align their long-term national infrastructure plans with inclusion and gender mainstreaming policies. Lack of co-ordination between public authorities responsible for gender equality policies, and line ministries or other governmental bodies in charge of infrastructure, could lead to a disassociated approach to gender-responsive infrastructure investments. Improving co-ordination requires building up institutional

capacity as well as gender-disaggregated data collection on infrastructure access and use, which could support introducing a gender lens in all stages of an infrastructure project. This would require, in turn, capital budget adaptation to include social and environmental factors (OECD, 2021^[39]).

As an extension order of its existing Framework for Infrastructure Governance (Box 2.8), the OECD has developed a toolkit for mainstreaming gender considerations into the infrastructure life cycle phase (OECD, 2021^[39]). The OECD Toolkit for Mainstreaming Gender Considerations into Infrastructure and Capital Budgeting highlights the following steps where OECD members apply tools to incorporate gender mainstreaming:

- Long-term vision for gender-responsive infrastructure;
- Women’s voice and agency in infrastructure decision making;
- Gender considerations in project appraisal, selection, risk assessment and design;
- Gender-sensitive infrastructure procurement and delivery;
- Gender angle in monitoring and evaluation.

Box 2.8. The OECD Framework for Infrastructure Governance

The 2017 [OECD Framework for the Governance of Infrastructure](#) identifies ten “success factors” to help policy makers improve the management of infrastructure policy, from strategic planning to project delivery. It identifies challenges in infrastructure governance, maps the key dimensions of an effective infrastructure policy system, and presents an overview of current practices in infrastructure governance, which include instruments such as public procurement, budgeting, and integrity frameworks.

In 2020, OECD members endorsed the [OECD Recommendation on the Governance of Infrastructure](#), which allows for more gender-inclusive projects, and ensures gender mainstreaming and direct involvement of women throughout the infrastructure governance cycle. In particular, the Recommendation suggests a whole-of-government approach that emphasises gender, resilience, environmental, regional and social perspectives. It serves as a key tool for responsive and efficient decision making and considers multi-disciplinary objectives such as climate resilience and gender equality policy.

Source: (OECD, 2017^[40]); (OECD, n.d.^[41]).

2.3.3. Sustainable agriculture and forestry

The Greek NSCCA places particular emphasis on agriculture and forestry as part of the land use, land-use change and forestry (LULUCF) sector contributing to CO₂ and GHG emissions. It also recognises these sectors as being more vulnerable to the impacts of climate change. Attention is given to the need to develop rural development, as well as forestry policies, which could adapt to climate change impact and preserve biodiversity. A special focus is granted to sustainable farming practices, organic farming, and to forest ecosystems’ adaptation.

Women’s participation in agriculture and forestry is often linked to sustainable agriculture, as women hold traditional local knowledge and have an important role in biodiversity conservation and ecosystem-based management. In developing countries, despite agriculture often being a female-dominated sector, women’s role in management and ownership is limited due to legal, financial and other barriers that limit their access to land and non-land assets (OECD, 2021^[11]), makes the shift to more sustainable practices more difficult to achieve.

The situation is contrary in OECD countries. Female presence is more limited, yet women do experience secure access to land and non-land assets, formal financial resources, and workplace rights (OECD, 2019^[42]). Despite agriculture being a male-dominated sector in almost all OECD countries, it is the sector, among those related to the environment, where women are more present.

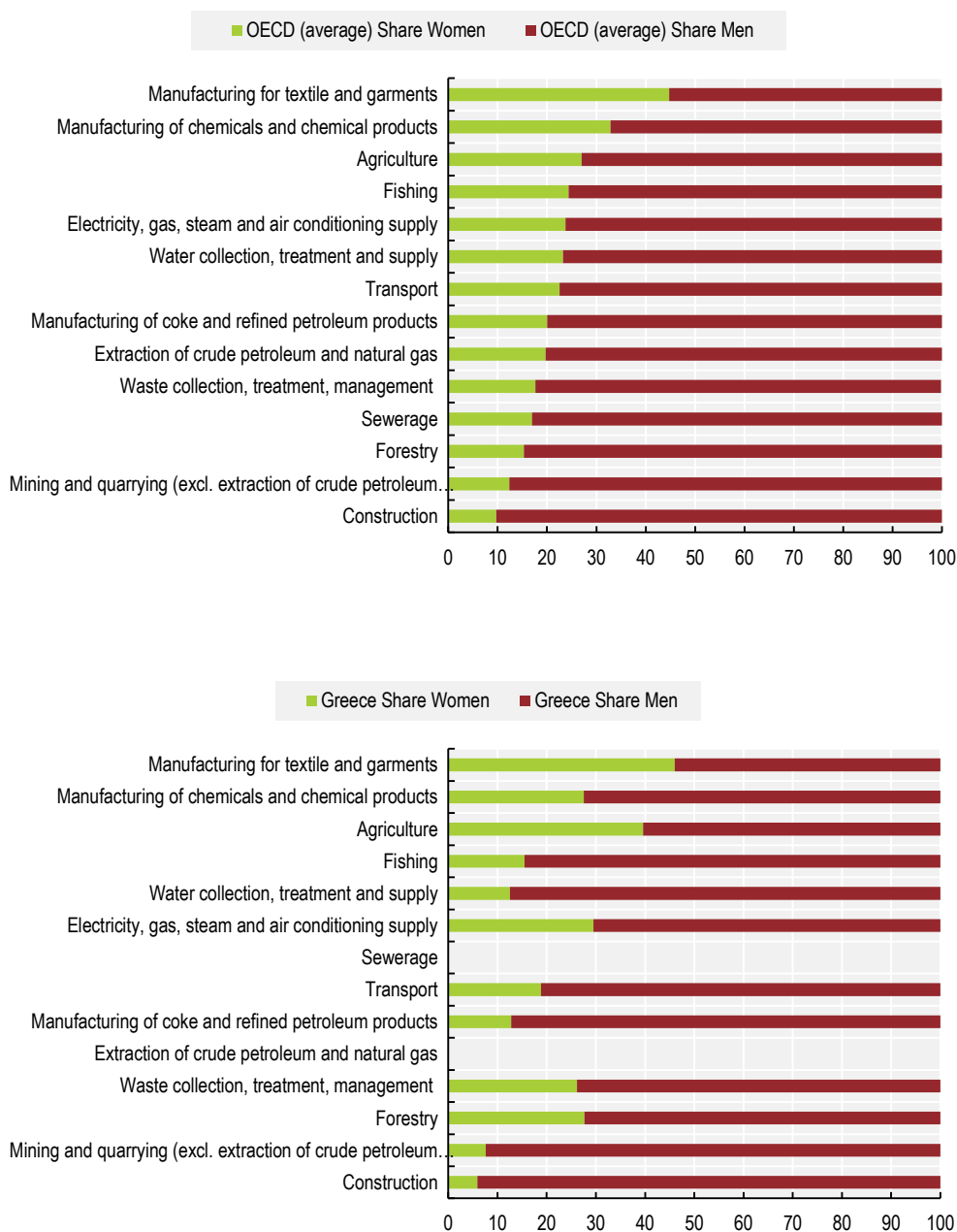
The share of women employed in the agriculture sector is high in Greece, with women holding about 40% of jobs compared to the OECD average of 27% (Figure 2.1). This could be explained by high ownership levels of land by women in the country (Gkasouka and Foulidi, 2018^[43]). The sector is also characterised by high informality, often associated with supporting family farming-related activities, suggesting that the actual share of women's participation may even be higher. Recent analysis for EU member states ranked Greece third in participation of women workers in informal employment in agriculture, behind Romania and Slovenia (European Parliament et al., 2019^[44]). However, in many countries, including EU member states, women's land work in rural areas is considered part of their daily household responsibilities so is not recorded in statistics nor linked to social security benefits and public financing opportunities. Women also take on seasonal and part-time agricultural jobs which may not be recorded in data collection (EIGE, n.d.^[45]).

The same applies to forestry, where men's participation is six times higher than women's on average in OECD countries. In Greece the difference is much smaller, with about one woman for every three men in the sector, though the economic activity is also limited (Figure 2.1).

Evidence suggests that men and women set different priorities on forest management. A study in Sweden shows that men forest owners value as a main objective the increase in timber production, while women value the preservation of forests, plants, animals and cultural environment (Umaerus, Högvall Nordin and Lidestav, 2019^[46]).

Guaranteeing gender sensitivity in agriculture and forestry policies could increase women's participation in the sector while also supporting a shift towards sustainable and organic farming. Evidence indicates that women tend to adopt sustainable organic farming practices in some OECD countries (Sachs, 2006^[47]) (Dinis et al., 2015^[48]) and apply for agri-environmental government subsidies (e.g. in Italy) (Chiappini and De Rosa, 2011^[49]).

Figure 2.1. Employment in environment-related economic activities, by gender



Note: 2020 data, except for UK (2019). Average for OECD does not include data for Australia, Canada, Chile, Colombia, Israel, Japan, Korea and New Zealand. Data used under economic activity classification ISIC-Rev.4 (2-digit level).

Source: ILOSTAT.

Gender-sensitive agriculture and forestry policies could also help to maintain a younger and well-educated population in rural areas (European Parliament et al., 2019^[44]). A 2017 survey of women farmers commissioned by the Greek General Secretariat for Gender Equality indicated that 71% of respondents were aware of new farming processes (organic farming, environmentally-friendly crops) even if they did not practice them, 45% expressed an interest, and 54% expected such farming to attract young women back to rural areas. The same study identified a need for targeted government programmes to enhance women farmers occupation with organic farming, as well as a need to revise tax policies, social charges

and pension schemes, which would acknowledge women's different sources of income (for example from participation in women-led farmers co-operatives in parallel to their own agricultural activity). Finally, it encouraged the participation of women farmers in decision-making processes at the local and national level (Gkasouka and Foulidi, 2018^[43]).

National legislation also exists on setting up Women-led Farmers' Co-operatives, in an attempt to support women's engagement in agricultural activities and leadership. The results of such initiative are still to be shown, yet advancing women's activity would require some measures of positive discrimination. So far, only 3% of registered co-operatives and associations are women-led, focusing in agro-tourism and handcrafting activities (MoADF, 2021^[50]). Financial and other incentives could be put into place to advance such co-operatives, with a focus on sustainable activities, in comparison to other farmers' co-operatives.

Spain's proposed Common Agricultural Policy (CAP) Strategic Plan 2023-2027 includes some gender elements. The plan highlights reducing the gender gap and supporting generational replacement, notably as two thirds of active farmers are expected to retire in the next decade. To counterbalance the negative effects to agricultural labour, there will be premiums of up to 15% of aid to incorporate young farmers and livestock farmers (MAPA, 2021^[51]). Ireland is also introducing policies to support women's participation in farming; which include targeted grant aid of 60% to women up to 55 years of age, in comparison to men who receive 40%; as well as increasing women's knowledge and adoption of innovative farming approaches through a Knowledge Transfer tillage scheme and their participation at the European Innovation Partnerships (DoAFM, 2021^[52]). Chile has introduced a training programme for rural women, under the auspices of the national Institute for Agricultural Development (INDAP) and the Foundation for the Promotion and Development of Women (PRODEMU). The programme, which has a duration of three years, considers women's participation in the productive promotion of forestry, agro-industrial activities, rural tourism or handicrafts, with a focus on environmental sustainability (OECD, 2019^[53]).

In La Rioja, Spain, a draft of the Law on Agriculture and Livestock was recently presented. It introduces the principle of positive discrimination towards young people and women in public administration actions. Such measure, favouring the owners of agricultural holdings or those in the process of gaining access to the ownership of holdings, is expected to provide motivation to youth and women to more actively get engaged with agricultural production (Agroinformacion, 2022^[54]).

No specialised programmes addressing women's engagement in the forestry sector are currently under consultation in Greece. The Ministry of Environment and Energy is in discussions for additional staff in charge of developing forest maps for the national forest registry, to be financed through general interest programming (services accessible to the public). Prioritisation is given to long-term unemployed and vulnerable groups with technical qualifications. The programme will also provide training to those participating. However, no gender considerations are so far included in this programme, while some prerequisites for participation (such as limitation to only one person per household to participate in the call) could discourage qualified women to apply.

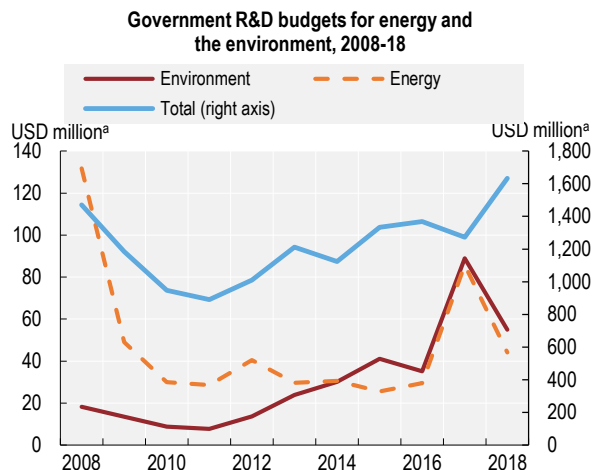
2.4. Increasing women's participation in environment-related innovation

The Greek NECP sets a target of doubling R&D budget allocations for energy and environment between 2017 and 2030. This is expected to improve Greece's competitiveness by enhancing energy efficiency and reducing energy costs; to increase the energy sector's value added through creating or maintaining 60 000 labour positions; and to tackle challenges arising from lignite phase-out (MoEE, 2019^[6]). It is unclear how new jobs will link to R&D budget allocations or if they will be "green".

Greece's R&D budget allocations for energy and the environment are highly dependent on EU funding and critically lower than the OECD average, despite an upward trend from 2008 to 2017 (OECD, 2020^[7]). In

2017 and 2018, there was a decrease in R&D funding for energy and environment as a percentage of the government's total R&D budget (Figure 2.2).

Figure 2.2. Greek government R&D budgets for energy and the environment, 2008-18



Note: a) At 2010 prices and purchasing power parities.

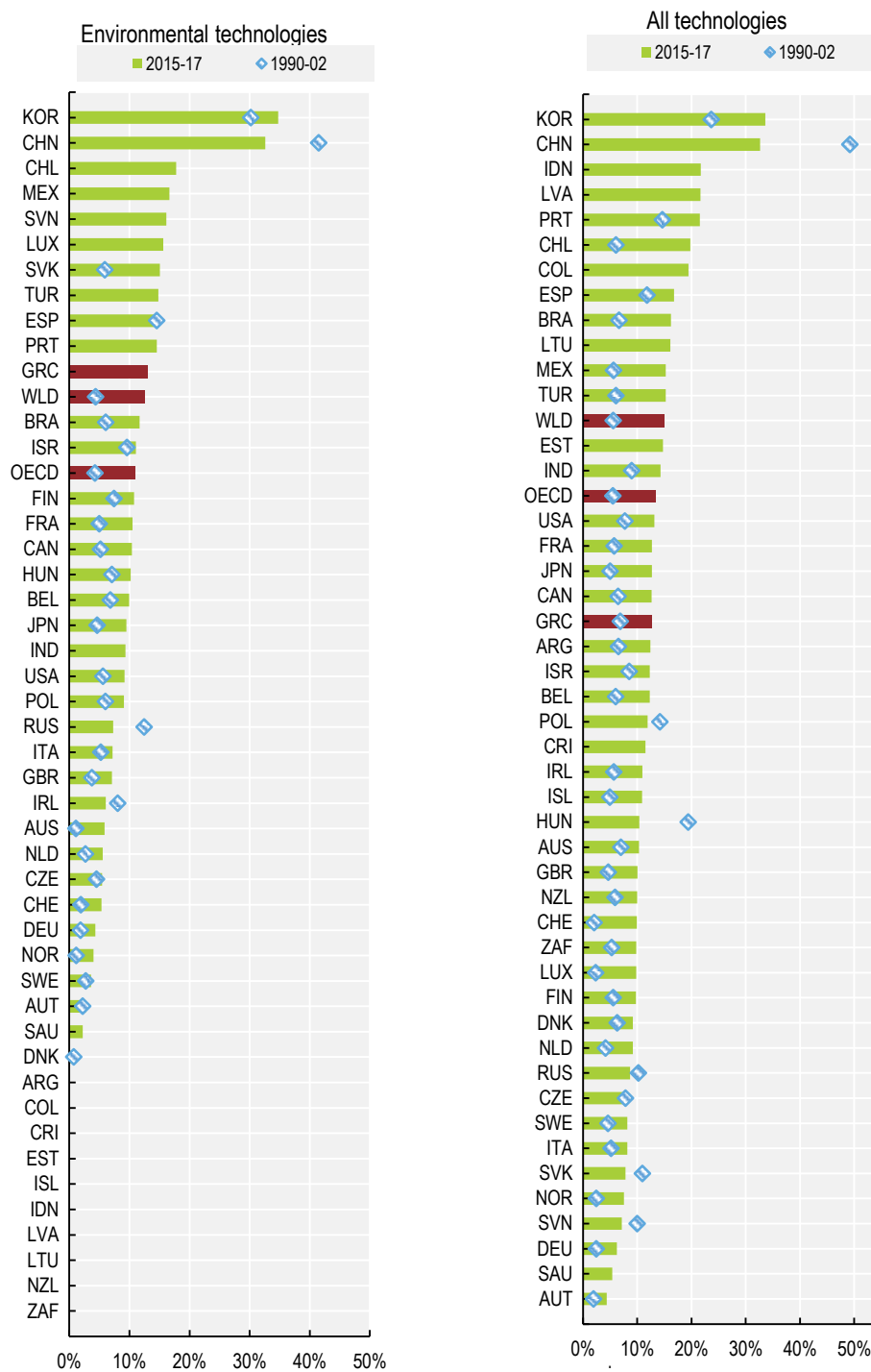
Source: (OECD, 2020^[7]).

Greece is performing modestly in innovation compared to other EU countries. Structural limitations such as a fragmented R&D framework, limited access to finance, and weak linkages between science and business exist (OECD, 2020^[7]). The characteristics of Greek businesses (mainly micro- and small firms with low productivity levels and low value added (OECD, 2021^[55])) limit their capacity to invest and capitalise benefits from innovation. This trend also applies to eco-innovation, despite Greece's promotion of innovation in industrial and municipal waste management; anti-pollution technologies and industrial symbiosis; utilisation of the marine environment's wealth; and the participation of business in efforts to increase resource efficiency and biodiversity (Mitsios et al., 2019^[56]).

Women's participation in sciences and innovation could both enrich environmental outcomes and help overturn deep-rooted perceptions and social norms regarding their role. However, in education women show a low take-up of STEM (science, technology, engineering and mathematics) subjects when compared to men, which could potentially translate into a lower representation in research and development, and therefore green innovation (OECD, 2021^[1]). More resources and actions are needed to promote programmes that increase the uptake of scientific research and innovation by women, and to tackle the barriers to their participation in STEM education.

Comparing country data, women's participation in developing green inventions (environmental technologies) in Greece is 13%, higher than the OECD average of 11%. The same does not apply to all technologies, despite the fact women inventors almost doubled between 1990-02 and 2015-17 (Figure 2.3). In general, there is no uniformity between countries when comparing the level of women's participation in environmental or other technologies, the level of green innovation in the country's economic activity and the level of gender equality in policy making, which implies that for each country there are various factors that should be considered coherently to achieve greater women's inclusion in green technologies, and the green economy more widely.

Figure 2.3. Share of women inventors by country



Note: Values based on less than 10 high-value inventions (claimed priorities) are not shown. Countries not meeting this threshold are shown as data not available (n/a).

Source: OECD (2020), OECD Environment Statistics (database); OECD calculations based on extractions from EPO (2019) and using dictionaries from Lax Martínez et al. (2016) and search strategies developed by OECD.

Women are less present in technical subjects in education and research, such as physics and digital technology (computer science), despite progress in their participation in specific scientific subjects. On average, in natural sciences, engineering and ICTs (NSE & ICT) women comprise over 7% of all tertiary graduates, with men accounting for about 16%. Greece is marking a higher presence of women graduates in NSE & ICT, with the share of women at over 11% and that of men at almost 17% of all tertiary graduates. Overall, Greece maintains a high percentage of NSE & ICT graduates, over total graduates, when compared to other OECD countries (Figure 2.4). Yet, women’s labour market participation in STEM-related fields remains low, suggesting that gender stereotypes, cultural beliefs and implicit biases hamper women’s access to these professions.

Figure 2.4. Tertiary graduates in natural sciences, engineering and ICTs (NSE & ICT), by gender, 2016



Source: (OECD, 2019^[57]).

In parallel, there seems to be an increasing participation of women inventors in certain patenting activities, though their overall participation remains relatively low on average. While chemistry and health-related technologies had the highest levels of women’s participation in 2016, at about 24% and 20% respectively, environmental technologies only exceeded 12%. Thus, there is still a long way to go to achieve better participation of women in developing green technologies. Where women are present, it tends to be in so-called new domains such as solar photovoltaic and climate change adaptation technologies. Women are less present in transport and wind power technologies, where engineering – i.e. STEM-based – skills are required (OECD, 2020^[58]).

Supporting women in STEM studies and green research and innovation could also have positive impacts towards increasing women’s presence in traditionally male-dominated sectors, as well as those economic activities that are more “green”. For example, an International Renewable Energy Agency’s (IRENA) survey indicated a larger concentration of women in the renewable energy sector (32%) than the oil and gas industry (22%). This could imply a larger interest for women in environmental sustainability, nonetheless, women are mainly present in the administrative and non-technical positions (35%) rather than those that are STEM-related (28%) (IRENA, 2019^[59]). Initiatives to support girls’ education and women’s careers linked to STEM would require a holistic approach targeting not only the interested parties, but also educators, career counsellors, and research agencies, in an attempt to break existing barriers.

Box 2.9. Good practices: Australia's strategy for women in STEM

The Australian Government's strategy for women in science, technology, engineering and mathematics (STEM) aims to increase gender equity in STEM education and careers. They envision a society that provides equal opportunity for people of all genders to learn, work and engage in STEM. The government leads and supports action in three areas: (i) enabling STEM potential through education, (ii) supporting women in STEM careers, and (iii) making women in STEM visible.

In order to support action on gender equity, the government is focusing on long-term strategic interventions, for instance through the Women in STEM and Entrepreneurship (WISE) grants programme. Announced under the National Innovation and Science Agenda (NISA), the WISE programme has already provided AUS 8 million to support 46 projects and will continue to provide up to AUS 1 million per year to support targeted STEM gender equity initiatives.

To enable STEM potential through education, the Australian government has committed over AUS 500,000 to the development of a Girls in STEM Toolkit, which was delivered in August 2019. The Toolkit aims at educating girls, as well as parents, teachers, career counsellors and other influencers, on opportunities in STEM. Another AUS 25 million over ten years were invested to support the greater participation of Indigenous girls in STEM.

Furthermore, the Australian government provided AUS 2 million over 3 years to support the expansion of the Science in Australia Gender equity (SAGE) pilot that includes 44 Australian universities, medical research institutes and research agencies. The pilot was found to have a positive impact and demonstrated the potential for transformational change.

Source: (DISER, n.d.^[60]).

Moreover, women's empowerment and leadership in the energy sector may play a catalytic role in ensuring access to affordable, reliable, sustainable and modern energy services for all. Evidence suggests that private firms with more women in their governing boards and senior management are more likely to take sustainable initiatives compared to those with no gender diversity (Hossain et al., 2017^[61]) (Post, Rahman and Rubow, 2011^[62]). At the same time, energy continues to be one of the sectors where women are less present in senior official and management positions when compared to others in government and business (either corporate or small enterprises) (IEA, 2020^[63]). Initiatives such as the C3E, supported by the International Energy Agency (IEA), could be adapted to Greece and, with the engagement of local actors, support women's presence in the renewable energy workforce (Box 2.10).

Box 2.10. Good practices: Advancing women's participation and leadership in the clean energy sector

The Clean Energy Education and Empowerment (C3E) initiative was launched at the Clean Energy Ministerial in 2010. Supported by the International Energy Agency, C3E focuses on enabling greater diversity in the clean energy professions. By bringing together public administration, private sector and academia, the initiative aims at identifying best practices and enabling data and experience sharing on career development. The C3E Technology Collaboration Programme is developing indicators to monitor the progress of women's participation in the clean energy sector workforce.

C3E in the United States

The United States C3E Initiative was launched in 2010 and is led by the United States Energy Department in collaboration with the MIT Energy Initiative, Stanford's Precourt Institute for Energy and Texas A&M Institute. The initiative includes the C3E awards that are acknowledging mid-career women who have an outstanding leadership and accomplishments in clean energy. Furthermore, it engages in promoting concrete, visible and measurable actions that encourage women's participation and leadership in the energy sector.

The United States Energy Department is committed to advancing women's participation and leadership in the energy workforce, and in furthering STEM education by working in partnership with stakeholders to inspire girls and women to go into science, technology, engineering, and math careers and seeking to remove barriers to participation in STEM.

Source: (C3E International and IEA, 2019^[64]) (U.S. Department of Energy et al., n.d.^[65]).

Any efforts would also require support in breaking possible access barriers, which not only limit women's initial entry to STEM-related and green occupations, but also their advancement (for a definition of green jobs/occupations see Box 3.2). The United Kingdom Institute of Marine Engineering, Science and Technology, together with the Women's Engineering Society, have introduced the STEM Returners project, which offers paid short-term work placement for women and men restarting their professional career. According to the project's findings, over half of those participating in the project with the aim to return to employment are women, when the number of women already in marine engineering, science and technology in the UK reaches only 8% (STEMReturners, n.d.^[66]).

2.5. Women's role in the circular economy

Greece released a two-year national Circular Economy Action Plan (CEAP) in 2021, aiming to better align the national framework to the European Commission's European Green Deal and Circular Economy Action Plan. The 2021-2023 Action Plan encompasses 59 actions, grouped under the following axis: (i) sustainable production and industrial policy; (ii) sustainable consumption; (iii) less waste with higher value; and (iv) horizontal actions, i.e. on governance and monitoring, to cover all above; and (v) specialised actions for priority basic products (MoEE, 2021^[67]).

In parallel, several legislative and other initiatives have been adopted in the period 2019-2021, including among others a new legal framework on waste management, an action plan for green public procurement, initiatives to reduce food waste, and financial (dis-)incentives based on pay-as-you-throw principle and promoting products' eco-design. These initiatives are also depicted in the CEAP, in line as well with the NECP priorities (MoEE, 2021^[67]).

Business models that are more resource efficient and promote the reduce-recycle-reuse triptych, are core to the transition towards a circular economy. A circular economy in its turn is expected to strengthen growth prospects, increase the competitiveness of domestic firms and create jobs in innovative sectors (OECD, n.d.^[68]). When the circular economy is supported by advancements in the Information and Communications Technology (ICT) sector and digitalisation, it can contribute to both resource productivity growth and reduction in negative environmental externalities associated with resource lifestyle. Beyond the environmental and business aspects of circularity, a circular economy should also consider social implications and opportunities, so as to guarantee inter- and intra-generational equality in the long-run (Murray, Skene and Haynes, 2017^[69]). One of the social implications to be considered should be gender equality.

Engaging women in the circular economy - through supporting their integration in green jobs (see Box 3.2), awareness-raising on sustainable consumption and encouraging participation in leadership and

managerial roles - is indispensable to create good circular systems. A move towards a more circular economy can be designed to encourage gender equality. As women are more often segregated into low pay, low security and limited social mobility jobs, the rise of green jobs as part of the circular economy movement offers an opportunity to empower women (ILO, 2015^[70]). Integrating gender considerations in a circular economy framework may also lead to an increase in women's participation in the economic activity. Based on 2020 data, women in Greece occupy about 26% of positions in waste collection, treatment and supply, higher than the OECD average which is at 18% (Figure 2.1).

Even though no gender analysis was undertaken when developing the Greek CEAP, some of the actions proposed could have a direct impact on gender equality and women's economic empowerment (Table 2.4).

Table 2.4. Greek Circular Economy Action Plan's gender considerations

Gender considerations	Actions in CEAP
Boost women's participation in green labour market / Support women's inclusion in green entrepreneurship - Provide positive discrimination to achieve gender equality in green economic sectors	Incentives for the design and production of products that support circular economy models and the establishment of an SME support mechanism
	Integration of criteria for sustainable production in extended producer responsibility programmes
	Creation, organisation and licensing of new Alternative Management Systems (ALS) (textiles, vehicle spare parts, photovoltaic panels, wind turbines, pesticide packaging, expired medicines, mattresses, furniture, fishing gear, tobacco products)
	Establish a financing programme for constructing new and modernising existing infrastructure for source screening, recycling and waste recovery to achieve the objectives of the new national waste management plan
	Institutionalisation of mandatory criteria for green public procurement and related objectives
	Formulation of a special action plan for tourism and a special action plan for blue development
	Feminising green consumption patterns
Institutionalisation of an integrated framework of financial incentives and disincentives to reduce municipal waste production	
Formulation of a special action plan to reduce food waste	
Support women's engagement with green innovation	Joint state aid action "Research-Create-Innovate"
	Actions to promote the creation of a non-toxic environment
Enhance women's representation and leadership in environment-related sectors	Creating a circular economy coordinating body
	Establishing a national circular economy observatory
	Setting a national initiative "Circular Alliance for Greece" and signing voluntary agreements with stakeholders

Source: Author's graph, based on information provided in the Greek Circular Economy Action Plan (MoEE, 2021^[67])

2.5.1. Supporting women's inclusion in green entrepreneurship and sustainable production

Recent OECD analysis on the labour implications of the transition to a resource efficient and circular economy shows that there is an expected increase in green jobs by 2040, as in the secondary-based metal production and recycling sectors (Chateau and Mavroei, 2020^[71]). At the same time, narrowing the gap between men and women in labour force participation, is expected to bring larger than expected economic gains, due to the positive impact of gender inclusion on growth, and the welfare gains from removing social and other barriers. This is even more so the case in sectors where there is limited women's participation, as for example the environment-related sectors and circular economy sectors (Ostry et al., 2018^[72]).

Introducing green growth policies and moving towards a green transition through climate and energy policies are expected to have higher labour implications in labour-intensive sectors, such as mining and quarrying, electricity, chemicals and food products (Chateau, Bibas and Lanzi, 2018^[73]). A shift to a green economy is likely to be accompanied by a declining demand for dangerous occupations, as for example in mining, even though health and other risks may also be associated to green occupations, such as in construction or recycling (Botta, 2019^[74]).

Nevertheless, a shift to jobs in the low-carbon economy would also require developing a set of green skills (see Section 3.2.1). Analysis shows that these skills would probably be a combination of “traditional” skills (e.g. autonomy and communication) and generic green skills (e.g. reducing waste), meaning that up-skilling, rather than re-skilling, may be more appropriate for workers in traditional “brown” sectors (e.g. emission intensive sector such as heavy industries). Yet, considering the limited female participation in traditional “brown” sectors which may now be shifting to net-zero, a different, more targeted, approach may be required for women willing to enter the green job market. This should also be topped up with initiatives to attract women towards STEM education, and to promote vocational training and job opportunities in green sectors to women, since these may require a combination of technical and physical skills (Botta, 2019^[74]).

In parallel, the shift to more circular economic models may also have an effect to sectors such as textile and garment manufacturing, where women in Greece hold the highest participation rate when compared to other environment-related sectors (Figure 2.1); or to other sectors that will become more digitalised, and which again will require a different set of skills.

Women could also play a catalytic role in shifting companies’ corporate decisions to more sustainable options, as their presence in corporate boards and senior-management positions can improve companies’ environmental performance (Strumskyte, Ramos Magaña and Bendig, 2022^[75]). Evidence shows that company corporate boards with at least three female members tend to take more responsible decisions on issues linked to pollution prevention, emissions reduction, use of recycled materials in production, and use of renewable energy. Such companies also show a higher commitment to environment-related reporting (Post, Rahman and Rubow, 2011^[62]). A more equitable representation of women in decision-making positions in the private sector may indicate a shift to more circular initiatives and eventually a shift to more circular business models.

Entrepreneurship is often seen by women as a way out of limitations that are linked to existing barriers in the labour market or to their multiple responsibilities (household, care responsibilities, professional etc.). Women show a preference to self-employment as it offers more flexible working hours, and it also allows them to avoid the “glass ceiling”. Nevertheless, women face other barriers when entering self-employment and entrepreneurship, such as an unsupportive culture, a fear of lack of entrepreneurial skills, limited access to finance, more condensed and usually less effective entrepreneurial networks, and often conflicting family and tax policies (OECD, 2021^[76]). It is worth noting that Greece scores the highest levels of self-employed men among OECD countries, either with or without employees. Self-employed women are also predominantly own-account workers (i.e. work for and by themselves), however Greece scores the highest among OECD countries in the category self-employed with employees (OECD, 2022^[77]); (OECD, 2022^[78]). Despite their large presence in self-employment – and therefore entrepreneurship - 66% of Greek women entrepreneurs report that “fear of failure” is a barrier to business creation, when the OECD average is around 50%, indicating the significant need to overcome the existing unsupportive culture, and other barriers (OECD, 2021^[76]).

These barriers apply also to green entrepreneurship. Advancing women’s engagement into green entrepreneurship, that could support a circular economy, would require tailored initiatives around finance, skills and support. These could be supporting green entrepreneurship education and green skills, including skills necessary for circular business models; facilitating access to financial resources, accompanied also

by courses in financial literacy; and setting up networking and mentoring programmes for women in green entrepreneurship (Strumskyte, Ramos Magaña and Bendig, 2022^[75]).

Box 2.11. Good practices: The FIT initiative

The “Financial literacy and new business models to boost women entrepreneurship possibilities” (FIT) initiative advocates for empowering women’s entrepreneurial activities, using circular economy business models. A team of six organisations from Greece, Italy, Lithuania, Malta, Poland, and Spain aims at preparing and testing a learning and coaching programme specifically designed to support women entrepreneurs in starting or reshaping their business, using circular economy business models, and appropriate financial planning. The programme aims at supporting women entrepreneurs in:

- Learning about new business models and contributing to the green economy;
- Increasing their financial literacy and sound financial and strategic management skills;
- Developing managerial and leadership skills; and
- Increasing networking and mentoring opportunities.

Source: (FIT, n.d.^[79]).

Directly linked to the Greek CEAP, it is worth exploring specialised training programmes for green skills and financial literacy targeted to women and financial incentives for women-owned green businesses related to circular economy activities or business models. Acknowledging women’s high presence in the services sector, incentives to promote product service system models - where services rather than products are marketed - could potentially benefit women more if accompanied with other measures overcoming structural and other barriers mentioned above.

Socially sensitive and innovative projects aimed at providing women’s economic security do exist. In Spain, the women-led Otro Tiempo Otro Planeta initiative provides women at risk of social exclusion or victims of gender-based violence with an opportunity to actively participate in an economic activity. Women collect and transport used cooking oil and recycle it to alleviate risks of polluting waste and of maintaining municipal waste infrastructure. The initiative installs containers for used cooking oil in common spaces in neighbourhoods, which are then collected and replaced with clean ones. In 2015, over 30 000 liters of biodiesels was produced from the collected cooking oil. The initiative follows the principle of work-life balance by establishing flexible working hours for its workers, teleworking, assistance for workers with dependent family members, training and income generation, and transferable working hours to accommodate family needs (Otro Tiempo Otro Planeta, n.d.^[80]).

2.5.2. Gender-sensitive green public procurement

Greece has been committed to green public procurement (GPP) since 2010, excluding suppliers that do not comply with environmental regulations and standards (OECD, 2020^[71]). In February 2021, a three-year national Action Plan for Green Public Procurement (APGPP) was introduced to align the national framework with EU legislation and guidelines on introducing environmental considerations and circularity in public procurement. Special focus is given to five product categories: paper, cleaning products, IT equipment, air conditioning and lighting. The Action Plan is aligned with European Commission methodology (EC, 2016^[81]), whereby public procurement needs to take into consideration the budgetary, environmental and market impacts of each tender. Annual quantitative targets are set for the procurement of certain products and services under green criteria (eco-labelling, certification, technical requirements and standards etc.) (OG, 2021^[82]). These are to be gradually implemented by public authorities (national,

regional and local). The Action Plan is supported by capacity building exercises, where training is offered to both public officials and suppliers willing to participate in the procurement procedures (EC, 2021^[83]). Such training envisions to inform and raise awareness on both the environmental and social benefits from procuring products and services that are friendly to the environment (OG, 2021^[82]).

Gender mainstreaming in public policies could bring gender inequalities to the forefront and assist policy makers in taking more informed and fair decisions. Gender-sensitive public governance can contribute to identifying gender-related integrity breaches; improving awareness of existing gender inequalities; promoting inclusiveness, participation and diversity; and supporting access to justice. Public procurement could be a strategic lever to promote gender equality, by lifting embedded biases and gender stereotypes in the public procurement policy framework. Such an approach could both boost women's economic empowerment, through their active participation in procurement procedures, and guarantee a more gender-sensitive and gender-responsive approach to public purchases (OECD, 2021^[84]).

Adopting a sustainability approach to public procurement could potentially stimulate a better environmental and social performance of products and services purchased. Reinforcing the Greek Action Plan on Green Public Procurement with gender-responsive initiatives, could help achieve a more sustainable and just approach to procurement processes. Such initiatives could include:

- Expanding capacity building exercises to cover both environmental and gender equality standards;
- Collecting data on women-led enterprises, as well as enterprises which apply gender equality standards, as well as on enterprises applying green standards and circular business models;
- Evaluating the gender- and environmental impact of bids, through consultation with other public authorities and civil society which could present knowledge to better frame the public procurement process in a more gender-neutral and environmentally sustainable manner.

The [OECD Recommendation of the Council on Public Procurement](#) recognises that adhering countries may use the public procurement system to pursue secondary policy objectives, such as gender equality and/or environment, however this should be done in a balanced way against the primary procurement objective (OECD, 2015^[85]). Therefore, complementarities and trade-offs between the different objectives should be identified and impact measured. OECD analysis has also highlighted that achieving a good use of public procurement for secondary policy objectives can be quite complex, particularly in contents where capacities are limited. Hence, when leveraging public procurement to advance green and/or gender objectives should be accompanied by programmes that create the right capacities in the procurement workforce as well as guidelines that can support the coherent coexistence of both objectives (OECD, 2021^[86]).

Box 2.12. Good practices: Green and gender-sensitive public procurement in the United States

Green purchasing/sustainable acquisition in the US federal government dates to 1976, with the first law establishing a preference for purchasing products made from recycled content. Today, purchasing mandates extend to, energy- and water-efficient products, bio-based products, environmentally preferable products, alternative fuel vehicles and products with reduced toxic and hazardous materials. Procurement requirements at the federal level follow sustainability mandates set up through the Federal Procurement Data System (FPDS). For purchases below USD 25,000 the Federal Acquisition Regulation mandates sustainable acquisition compliance.

There are designated environmental criteria for over 300 products. Sustainable acquisition requirements apply to products relevant to the following purchasing categories:

- electricity

- design and/or construction
- operations and maintenance
- janitorial products/services
- office supplies
- furniture
- cafeteria ware/services
- fleet management (vehicles)
- garments, uniforms, beddings and linens
- meetings and conference services
- IT equipment.

Besides green and sustainable purchasing, the United States government has also established socio-economic goals for procurements; which include purchasing from small businesses; from businesses that employ people with disabilities; as well as indigenous- or women-led businesses.

Source: (OECD, 2015^[87]).

2.5.3. Women's role in sustainable consumption

Research shows that women tend to be more sustainable consumers and are more sensitive to ecological, environmental and health concerns (Johnsson-Latham, 2007^[88]); (Kaenzig, Heinzle and Wüstenhagen, 2013^[89]); (Khan and Trivedi, 2015^[90]); (Bulut, Kökalan Çimrin and Doğan, 2017^[91]). Women are more likely to recycle, minimise waste, buy organic food and eco-labelled products and engage in water and energy savings initiatives at the household level (Yaccato and Jaeger, 2003^[92]). A 2008 OECD Household survey indicated that men were more likely to separate metal wastes, but not other material, even though differences in waste separation practices by sex do exist between countries as well as in relation to geographical locations (Palatnik et al., 2014^[93]). Moreover, there appear to be differentiated response to financial incentives for waste reduction between men and women, with women being less responsive (Ashenmiller, 2011^[94]).

The above findings are repeated in other studies. Women in Denmark seem to be more responsive to more sustainable waste management solutions. Depending on location and income, women are less sceptic than men on frequently using the recycling centre, and are more likely to accept sorting recyclables and bio-waste as part of their household waste disposal ritual compared to men. Men, on the other hand, seem not to be very engaged in recycling and pay less consideration to the environmental impact of their lifestyle choices (Nainggolan et al., 2019^[95]).

When asked about preferences for goods and services, for instance when selecting electronic products, women in Denmark seem to prefer those that have an end-of-life feature (that is, the ability of the product to be reused, remanufactured or recycled). Additionally, women would be more open to paying a premium price if the product purchased was more environmentally friendly. Men would also be willing to pay a supplementary amount, but only if that was very low (Atlason, Giacalone and Parajuly, 2017^[96]).

Acknowledging the gender differentiated behavioural preferences in household consumption, and waste generation and prevention, should be taken into consideration when designing effective public communications campaigns and promoting eco-labelling. Greece's awareness raising actions under the CEAP should integrate a gender-sensitive approach, adapting the messaging to different social groups, as well as engaging with business, media and civil society to promote positive and more sustainable consumption patterns.

In addition, providing incentives, as scheduled, to reduce urban waste by awarding citizens to reuse and recycle is a positive step. Linking these incentives to discounts on municipal services such as access to day-care, access to public transport etc., if designed in a gender-sensitive manner, could both support and promote women’s sustainable behaviour.

2.5.4. Equal representation in circular economy leadership

Evidence suggests that women’s participation in decision making can lead to better environmental outcomes in the public and private sectors (Strumskyte, Ramos Magaña and Bendig, 2022^[75]). Supporting women’s engagement in circular economy could assist in acknowledging women’s contribution to waste and resource recovery, while also guaranteeing gender considerations to be taken into account when designing future policies and actions.

The Greek GEAP includes a multi-level governance mechanism, with the establishment of a circular economy co-ordination body, a National Observatory for Circular Economy, and a “Circular Coalition for Greece”. These bodies, which guarantee stakeholder participation from public authorities, regional and local governments, private sector and academia, complement and support the inter-ministerial Committee on Circular Economy. Guaranteeing a gender equal participation in these bodies could allow for better representation of women’s perspectives when discussing and designing financial and other incentives for companies, developing indicators to monitor progress, as well as promoting awareness and information campaigns.

In addition, these bodies could explore other initiatives that could strengthen women’s participation in a circular economy. For example, the Government of South Australia has developed a “Women in Circular Economy Leadership Award” in an attempt to recognise women’s positive contribution to local waste and resource recovery industry. Women are invited to submit their innovative ideas in one of the following categories:

- Reforming household waste through innovative practices
- Reducing and avoiding food waste and developing industries
- Reforming packaging and single-use items
- Developing the circular economy in business
- Preparing for disaster waste management.

The project must indicate the relevance and benefits to local business, and is directed to women already engaged in circular economy activities. The award guarantees financial assistance of up to AUS 5,000 and mentoring by experienced women executive leaders (Green Industries SA, n.d.^[97]).

2.6. Women as agents for biodiversity conservation

Greece is rich in biodiversity, hosting a large variety of plants and species, many of which are endemic (IUCN, n.d.^[98]). Yet biodiversity loss is an established phenomenon in the country, with the main causes being urbanisation, habitat fragmentation, pollution, invasive alien species, climate change and fires. Despite the country’s framework being in line with international commitments, Greece needs to improve the national monitoring system, as well as mainstream biodiversity considerations in economic sectors, including especially agriculture and fisheries, transport and tourism (OECD, 2020^[7]).

Agriculture and fisheries, and tourism are two of the sectors with relatively high female labour participation in Greece, despite being male-dominated sectors. Considering women’s and men’s differentiated impact from biodiversity loss, and their potential role in ecosystem conservation (OECD, 2021^[11]), it is imperative to incorporate gender considerations in the country’s biodiversity policies.

Greece's National Biodiversity Strategy and Action Plan (2014-2019) links national targets to the Aichi Biodiversity Targets. Even though reference is made to Aichi Target 14, and women's needs, there are no explicit national targets set to integrate a gender-sensitive lens in achieving the targets (Box 2.13). It should be acknowledged, however, that the role of civil society and public consultations is enhanced, which would allow for women's presence and perspective being presented in this process (MoEE, 2014^[99]). Setting gender targets when updating the national Biodiversity Action Plan, as well as collecting gender-disaggregated data, could help integrate gender equality and women's empowerment considerations in the national policy framework, in line also with the expected post-2020 global biodiversity framework.

Box 2.13. Aichi Biodiversity Target 14

Under the Biological Diversity Convention's Strategic Plan for Biodiversity 2011-2020 and the Aichi Targets, the Strategic Goal D, "Enhance the benefit to all from biodiversity and ecosystem services", Target 14, includes a reference to women:

By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.

Source: (CBD, n.d.^[100]).

Greece's Environmental Law adopted in 2020 introduced changes to the national model for the management of the country's protected areas. Following an integrated model inspired by the management structure in Austria and Finland, a new co-ordinating body was established. The "Natural Environment and Climate Change Agency" is an independent body overseen by the Ministry of Environment and Energy, with the main tasks to manage protected areas, promote sustainable development and fight climate change (OG, 2020^[101]); (Tzatzaki, 2020^[102]).

Even though no explicit references are included in applying a gender-sensitive approach when designing actions in relation to biodiversity and safeguarding protected areas, the Agency is finalising a Gender Action Plan, with which it will monitor the gender-balance in management and administrative positions. Already, the Agency's management positions are distributed in a gender-balanced way, with four out of nine Management Board members being female. The two Directorates overseeing the regional Management Authorities of Protected Areas are also led by one male and one female Director; and two of the five Heads of the Management Authorities appointed are also female (NECCA, n.d.^[103]).

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Notes

¹ The analysis in this report covers not only environmental sectors (i.e. producers of environmental products, such as goods and services produced for environmental protection or natural resource management), but also environment-related sectors and activities (i.e. other economic sectors that have an environmental impact, e.g. agriculture).

² Carbon budgets represent the total amount of emissions that may be emitted in a country during a five-year period, measured in tonnes of carbon dioxide equivalent.

³ Social infrastructure refers to infrastructure that supports the development of the human resource potential and ameliorates living conditions. It includes, but is not limited to, infrastructure relating to education; health; and water supply, sanitation and sewerage.



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