Prioritising jobs in the development of the green steel industry

A case study on the Canadian Sustainable Jobs Plan

November 2023

Regional and Urban Policy

Luxembourg: Publications Office of the European Union, 2024

Print ISBN 978-92-68-18144-7 doi:10.2776/79762 KN-05-24-488-EN-C
PDF ISBN 978-92-68-18143-0 doi:10.2776/490939 KN-05-24-488-EN-N

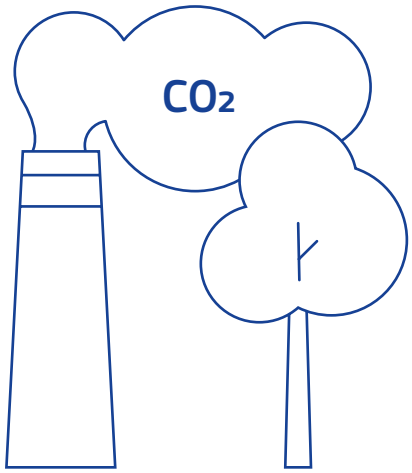
Prioritising jobs in the development of the green steel industry – A case study on the Canadian Sustainable Jobs Plan

Key messages

- → **Organise an inclusive stakeholder engagement process.** Canada placed particular emphasis on involving various stakeholders, e.g., labour unions, industries, educational institutions, and training initiatives, which resulted in effective stakeholder involvement. However, steelworkers and their unions did not always feel heard in the decision-making process regarding the "phase-out" and retrofit of the production facilities. Regional actors aiming to implement a Sustainable Jobs Plan can complement Canada's process with stronger cooperation with the workers on the ground to ensure the Plan is widely accepted.
- → **Ensure locally and regionally available support.** Canada aims to have advisory bodies for each province and territory that are composed of government, industry, labour, and other invested stakeholders to make sure sustainable jobs legislation accounts for regional differences, to simplify training processes and to increase accessibility. This should be done with both a sectoral and a regional focus, to help ensure that each regional and local difference is being considered in the supporting sustainable jobs and the development of new industries.
- → **Create the means to assess workers' existing skills to properly identify training gaps and develop adequate training options.** Through the Sustainable Jobs Plan Canada introduced a Sustainable Jobs Training Centre to map job transitions and capture all jobs related to the energy sector and industry.
- → **Involve labour unions in both the design and implementation of national sustainable jobs strategies.** Union-based training programs hold great potential for the SJP initiatives, especially because labour unions well know skills needed to enable a more productive, qualified sustainable workforce. The Canadian government will support s these trainings with funding to create new union training programs and promote of green careers and apprenticeship programs.

1. Introduction

Canada has committed to achieving net-zero emissions by 2050. A key element of achieving this target is Canada's just transition process. In 2003, the Canadian just transition started with the province of Ontario's provinces commitment to phase-out coal and was perpetuated by the national commitment in 2018 to phase out coal by 2030 and establish a national just transition process. As Canada works to phase-out coal power and support coal regions through the transition, reskilling and developing the Canadian workforce to align with Canada's transition to a climate-neutral society becomes essential. The next step in the Canadian just transition process is the Sustainable Jobs Plan, published by the Canadian Government in 2023 and focused on guidelines and mechanisms for the creation of new jobs and support for workers transitioning to the net-zero economy. In addition to re-skilling and supporting former miners and coal plant workers, the plan highlights how a workforce can be developed to support the decarbonization of carbon-intensive industrial sectors. This case study discusses the specific implications of the Sustainable Jobs Plan for the steel industry and offers lessons that can be drawn from the process thus far.



2. Progress towards climate neutrality and the just transition in Canada

Canada has committed to achieving net-zero emissions by 2050. The Canadian Net-Zero Emissions Accountability Act enshrined this commitment in legislation in 2021. To ensure progress towards the target, Canada set an interim target of a 40% to 45% reduction by 2030 relative to 2005 and published a 2030 Emissions Reduction Plan in March 2022.[1] The plan reflects input from provinces, territories, indigenous peoples, the country's Net-Zero Advisory Body, and Canadian citizens on what is needed to reach Canada's ambitious climate target. Canada's greenhouse gas (GHG) emissions decreased by 8.4% between 2005 and 2021.[2] While this overall trend is promising, Canada needs to accelerate action to achieve its 2030 target. Particular attention should be paid to sectors whose reduction efforts are not yet sufficient: including the industry sector, whose emissions rose by 4.1% in 2021 compared to 2020 levels.

The creation of sustainable jobs and a worker- and people-centred approach lies at the core of Canada's net-zero future. Currently, the Canadian government increasingly uses the term "sustainable jobs" to refer to what the international community terms "just transition". This term reflects the concept of decent, well-paying, high-quality jobs that support workers and their families, and includes elements such as fair income, job security, and social protection. In the context of the Sustainable Jobs Plan, the Canadian government understands a sustainable job to mean any job that is compatible with Canada's path to its net-zero future.[5]

An important first step in achieving a net-zero economy by 2050 was a commitment to phase-out unabated coal-fired power generation by 2030. The Canadian government made a national commitment to phase out coal in 2016 and has since supported affected Canadian coal workers and communities.3 Acknowledging that the decision to phase-out coal fired electricity generation and the transition of related jobs would impact regions, workers, and society unequally, the Canadian government appointed a "Task Force on Just Transition for Canadian Coal Power Workers and Communities" in 2018 to develop recommendations government on how to manage a just transition away from coal. The task force met with more than 80 stakeholders in 15 affected communities.4 More information on the final recommendations as well as a more in-depth overview of the task force process can be found here.

In line with the coal-phase out and since 2016, the Canadian Government has earmarked CAD $120 billion to invest in reducing emissions, drive clean growth, promote investment an innovation, and protect the environment. Each of these investment areas have been identified with the dual intention of stimulating the creation of sustainable jobs.[6]

The Canadian government complimented these investments with additional investments in skills programmes including:

- CAD $960 million over 3 years starting in 2021-22 for a Sectoral Workforce Solutions Program, to help key sectors implement solutions to emerging workforce needs. Therefore, it supports projects that focus on training and reskilling workers and help employers retain and attract skilled workforce. For instance, to empower energy industry workers to work in the renewable energy sector. The funding

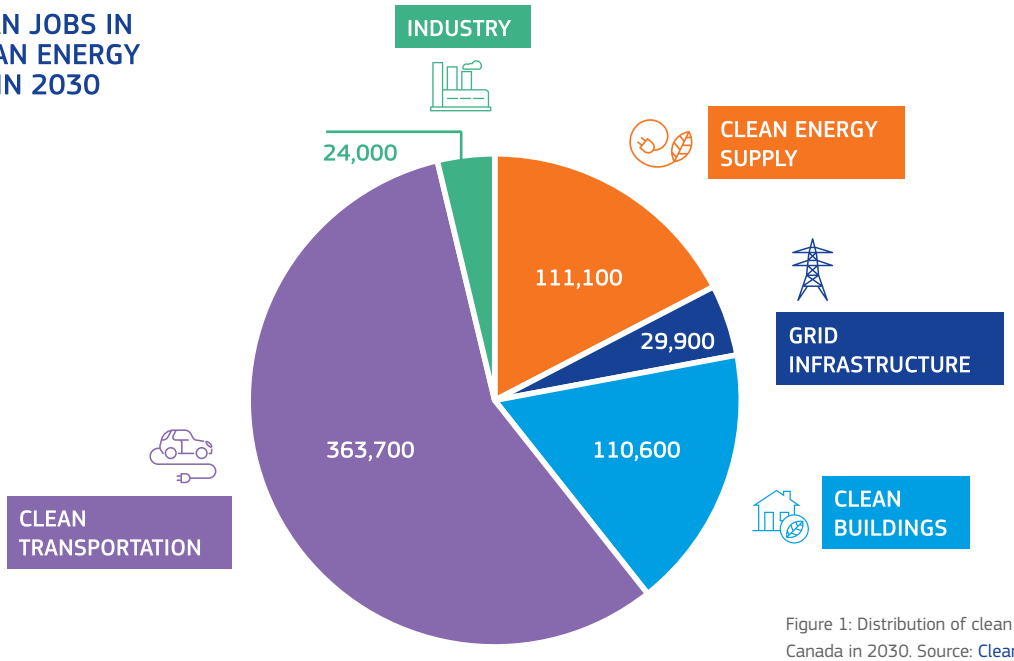


Figure 1: Distribution of clean energy jobs in Canada in 2030. Source: Clean Energy Canada

will support Iron & Earth's efforts to work with employers who are seeking skilled workers who want to be part of the clean economy. The newly funded initiatives will help those workers gain access to sustainable and meaningful employment and ensure the programs are available to equity-deserving groups, including Indigenous Peoples.[7]

- CAD $55 million over 2 years starting in 2022-23 for a Community Workforce Development Program, to connect employers and training providers to up- and reskill jobseekers and workers with the skills employers need and fill current and emerging jobs.

- CAD $25 million annually since 2020 to a Union Training and Innovation Program, to support union-based apprenticeship training and innovation. The program's objective is to improve the quality of training to better support a skilled, inclusive and certified trades workforce. It also aims to address barriers that prevent underrepresented groups, such as women and indigenous people, from succeeding in the trades. For instance, CAD $5.5 million was granted to the International Brotherhood of Electrical Workers in the Waterloo region for the local Apprentice Training, which will train a total of 240 electrical trade apprentices.[8]

- CAD $250 million over 3 years starting in 2021-22 for an Upskilling for Industry Initiative to scale up proven industry-led approaches to upskilling and redeploying workers across high-growth sectors, and clean technologies. In 2023, Palette Skills was selected as national delivery partner for the initiative. This not-for-profit organisation develops employer-driven upskilling programs to help transition high-potential workers into growing careers. Palette Skills works as a one-stop-shop for all related information and available trainings, e.g., for Automation & Digital Agriculture and Tech & B2B Sales Training.[9]

These investments and programs are now being further supported by the next step in Canada's just transition process, the publication of the Sustainable Jobs Plan (SJP) and the new Canadian Sustainable Jobs Act. The SJP lays out an initial national strategy to steer Canada towards a low-carbon economy while advancing the creation and uptake of sustainable jobs across the country (more information found in section 4 of this case study). The Canadian Sustainable Jobs Act is one of the 10 action areas outlined in the interim SJP and – subject to Parliamentary consideration – would require the creation of a Sustainable Jobs Secretariat and a Sustainable Jobs Partnership Council. Also, it would require the government to publish Sustainable Job Action Plans every five years to ensure the government will continue to support workers and it would require designating a responsible minister with overall responsibility for the Act and its fulfilment.

The goal of the Canadian government's investments, programs, SJP, and legislative framework is to ensure that the Canadian economy keeps pace with the needs of the global labour market and the variety of skills that will be in demand. It is anticipated that Canada will see an abundance of sustainable jobs with a shortage of workers required to fill them.[10] Canada's clean energy sector already employs 430,500 people—more than the country's entire real estate sector, one of Canada's key industries—and by 2030, that number is projected to grow almost 50% to 639,200 (see Figure 2).[11] The aforementioned initiatives are focused on ensuring the Canadian workforce is prepared, supported and skilled to take advantage of the growing Canadian clean economy.

Canada's emissions from iron and steel in heavy industry

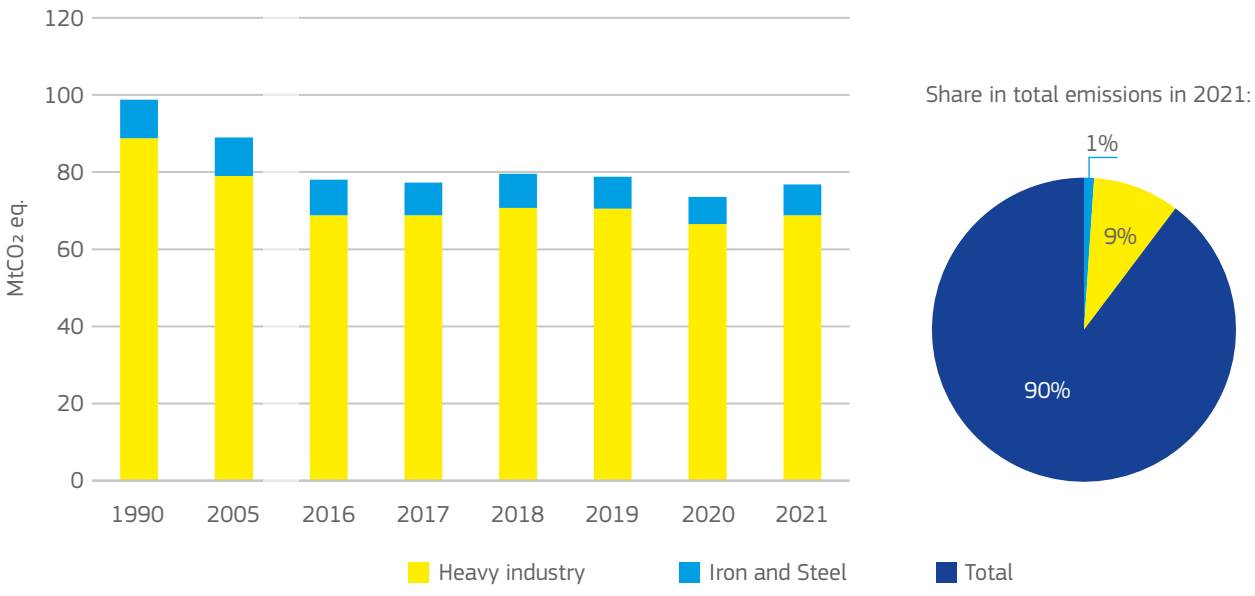


Figure 2: Canada's emissions from the iron and steel sector in heavy industry. Source: Environment and Climate Change Canada

3. Transformation of the steel sector in Canada

Though some areas of the Canadian economy, such as power generation, are decarbonizing others with large shares of workers and economic activity are working to plot their path. The Canadian steel industry represents an important cornerstone of the Canadian economy, as it accounts for CAD $2.8 billion of the national GDP and over CAD $130 billion in annual exports.[12,13] With an estimated annual production of 12 million tonnes, Canada is the 4th largest crude steel producer in North and South America (after the USA, Brazil, and Mexico).[14] Steel producers and associated industries are significant employers in Canada, with 23,000 high-skilled direct jobs and 100,000 indirect jobs linked to the sector.[15] At the same time, the Canadian steel and iron industries currently account for approximately 8 megatons (Mt) of CO_2-equivalents or 1% of national GHG emissions.[16] However, Canadian steel producers are aligned with national goals, aiming for net-zero emissions by 2050. Some significant progress has already been made towards this goal: compared to 1990, energy consumption in the Canadian steel sector was reduced by 12% and GHG emissions by 24%.[17,18] Emissions from the iron and steel sector and their share in total heavy industry emissions can be seen in Figure 2. The steel industry is a hard-to-abate sector, with cement, chemicals and petrochemicals, and aluminium and poses a particular challenge to achieving net-zero emissions. One tonne of steel produces 1.9 tonnes of CO_2 emissions on global average.[19] The production processes in these sectors cannot simply undergo a fuel switch but require new technologies such as direct reduced iron plants (DRI) and electric arc furnaces (EAF).[20] In DRI, iron ore is reduced with hydrogen to iron sponge, which is then further processed to produce steel. If the iron sponge production is done using green hydrogen, hydrogen produced with renewable electricity, this route is almost CO_2-neutral. In EAF, scrap steel is recycled and melted down into raw steel using electrical energy. In contrast to conventional production methods, no carbon-containing reducing agent is required. This electricity-based process could be almost CO_2-neutral as well if renewable electricity is used. While there are some pilot projects demonstrating the use of DRI as a future technology likely to be operational in the years to come, EAF technology is already in use.[21] These processes are expected to cut GHG emissions by more than 3 million tons per year by 2030, offering the potential to make a meaningful contribution to achieving Canada's climate goals.[22]

The steel sector's low-carbon transformation is already beginning to take shape in some places in Canada. For instance, ArcelorMittal Dofasco broke ground on its first low-carbon steelmaking project in Ontario with support from both the Canadian government (CAD $400 million) and the provincial government of Ontario (CAD $500 million). ArcelorMittal Dofasco is using the funding to build a reduced iron-electric arc furnace ('DRI-EAF'), which will make it possible to switch fuels to hydrogen in the long-run.[23] It is anticipated that this project will sustain up to 2,500 jobs during the engineering and construction phases.[24]

Algoma Steel Inc.'s in Ontario with currently 2,600 employees is being funded by the Canadian Government (CAD $420 million) to purchase state-of-the-art equipment to support its transition to electric arc furnace production. According to the Canada Infrastructure Bank (CIB), this investment will lead to 500 high-paying jobs during the construction phase, more than 600 new co-op placements (full-time, multi-work agreements alternating work and school terms and resulting in a five-year degree program) for students and 75 high-skilled STEM-field jobs.[25]

The transition will increasingly affect the structure of labour demand and may result in the obsolescence of some jobs in the industry sector. Steel workers sometimes fear the transition to green steel as electric arc plants require fewer people to run and need less maintenance.[26,27] However, this is not the ultimate effect on the labour market. As some sectors are adversely affected and will grow, people may be able to find employment in other occupations. With the transformation of steel production facilities to green steel, jobs constructing and maintaining new furnaces, as well as at renewable energy plants and hydrogen production facilities, are being created. Thus, the transition will lead to a shift in job distribution, but not ultimately in job losses.

4. Canadian Sustainable Jobs Plan with a view to the steel industry

The Canadian Sustainable Jobs Plan (SJP) ties many existing initiatives together into a comprehensive strategy to develop a robust and inclusive climate-neutral economy. The interim plan for 2023-2025 contains concrete federal actions to advance sustainable jobs in every region of the country. The plan precedes and sets an initial frame for Sustainable Jobs Action Plans that will be released by the Canadian government every five years, starting in 2025.[28] The plans need to outline how the government is supporting workers and communities and include specific metrics on who will be most impacted, how the government will measure success, and what progress has been made so far.

The interim Sustainable Jobs Plan outlines federal measures across 10 key action areas:

01. Establish the Sustainable Jobs Secretariat
02. Create a Sustainable Jobs Partnership Council
03. Develop economic strategies through the Regional Energy and Resource Tables
04. Introduce a sustainable jobs stream under the Union Training and Innovation Program
05. Advance funding for skills development toward sustainable jobs
06. Promote Indigenous-led solutions and a National Benefits-Sharing Framework
07. Improve labour market data collection, tracking and analysis
08. Motivate investors and draw in industry leadership to support workers
09. Collaborate and lead on the global stage
10. Establish legislation that ensures ongoing engagement and accountability

Insights from consultations with provinces, territories, partners, and stakeholders were considered when developing the SJP. Involved stakeholders ranged from indigenous organisations, to industries, business groups and utilities, to educational institutions and training organisations to labour unions. The government worked to include as many voices as possible in the consultations, possibly because representation was a point of criticism in past just transition stakeholder consultations. For instance, the Algoma Steel Inc. steel workers' union was not engaged by the government or the company itself during the discussions on the planned low-carbon transition and the redevelopment of the company.[29]

In the consultations, steel industry stakeholders along with other heavy industry representatives emphasised that sustainable jobs legislation should account for regional differences. It was suggested that each province and territory should have its own advisory body composed of government, industry, and other invested stakeholders to simplify training processes and increase accessibility. Under Canada's federal system, the powers of government are shared between the federal government and ten provincial governments. Provincial governments thus play some role in their regional economic development through public investments in transportation and direct taxation within the province. The jurisdictions are also responsible for the delivery, organisation, and evaluation of public education and healthcare systems. The Federal Economic Development Agency (FEDA) for Northern Ontario and the FEDA for Southern Ontario are good examples of such support bodies that help regional and local communities and organizations create the right conditions for economic growth while also including community efforts. The Prairies Economic Development Canada (PrairiesCan) shows how a regional authority can provide precise support where it is needed, if equipped with enough financial budget. In 2015, the province Alberta announced their coal phase-out for the year 2030. In 2018-19, a budget of CAD $25 million for the PrairiesCan over five years was made available by the Canadian government to support the transition of affected workers and communities to diversify their economies. A year later, this was topped up with $105 million in new funding over five years to help develop community infrastructure in coal-affected regions. With these funds, the PrairiesCan engages with affected communities to establish projects to support various economic diversification initiatives including worker transition services, feasibility studies, investment attraction strategies, and business supports in Alberta and Saskatchewan. Since 2016, PrairiesCan has supported 131 clean technology and clean resource projects that are expected to create over 5,000 jobs.

The availability of labour workforce was also raised by industry during stakeholder consultations as industry representatives highlighted that skilled workers are in high demand across the globe and that the Canadian Government must retain its skilled workforce. Industry stakeholders emphasised that education and re-training assistance is critical for workers, as is support for employers to hire and train employees with limited experience. Participants cited the Canada-Alberta Job Grant as a good example of provinces and the federal government working together to provide an employer-driven training programme. In this programme, the employer and the government share the cost of training new and existing employees to improve their knowledge and skills in various sectors, e.g., Business & Industry, Energy & Environment, Construction & Engineering, or Graphics & Media Arts. This idea is taken up in the SJP with the introduction of the sustainable jobs stream under the Union Training and Innovation Program (UTIP), as well as the Sustainable Jobs Secretariat. The details have yet to be determined, however, the idea of this cost-sharing approach will be considered.

In response to additional comments by industry players, the Sustainable Jobs Secretariat will also consist of a Sustainable Jobs Training Centre. Industries highlighted the importance of assessing workers' existing skillsets to properly map job transitions and determine training gaps that need to be filled. The Training Centre will help develop training and credential systems that ensure mobility for workers. Additionally, to

keep track of success, stakeholders from industry suggested regular monitoring and reporting of the progress made by the Canadian government. This is especially important to capture all jobs related to the energy sector and to track the progress on specific goals, such as the inclusion of indigenous workers and women.

Stakeholders also advocated for the Union Training and Innovation Program. Labour unions voiced support for union-led training centres that work closely with employers to help members, including young people, to receive training in the most in-demand skills, as well as the latest equipment and innovations. Although this initiative was already funded by the Canadian Government, the SJP announced a new Sustainable Jobs Stream to support unions in leading the development of green skills training for workers in the trades. It is expected that an additional 20,000 apprentices and journeypersons will benefit from this investment.

This document is part of a series presenting information and lessons learned on policy approaches at national, regional or local level supporting a just transition to a climate-neutral economy. The Just Transition Platform (JTP) assists EU Member States and regions to unlock the support in this transition. Visit the JTP website.

Endnotes

1 Government of Canada (2022). Canada's 2030 Emissions Reduction Plan

2 Government of Canada (2023). Greenhouse gas emissions

3 Government of Canada (2023). Coal phase-out: the Powering Past Coal Alliance

4 Government of Canada (2019). Task Force: Just Transition for Canadian Coal Power Workers and Communities

5 Government of Canada (2023). Sustainable Jobs Plan

6 Ibid.

7 Cision (2023). New Funding to Prepare Canadian Workers for Jobs in the Net-Zero Economy

8 Cision (2019): Government of Canada announces funding for innovative project to help apprentices in Waterloo region complete their training and find work in the skilled trades

9 Palette Skills (2023). Career Training Programs

10 Government of Canada (2023). Sustainable Jobs Plan

11 Clean Energy Canada (2021). The New Reality

12 Clean Energy Canada (2023). White Paper: Decarbonizing Industry in Canada and the G7

13 Government of Canada (2022). Steel and aluminum

14 World Steel Association (2023). December 2022 crude steel production and 2022 global crude steel production totals

15 Canadian Steel Producers Association (2023). Climate Call to Action

16 IRENA (2022). Innovation Day

17 Canadian Steel Producers Association (2023). Climate and Energy

18 Canadian Ministry of Environment and Climate Change (2023). National Inventory Report 1990-2021

19 World Steel Association (2020). Climate change policy paper

20 goClimate (2023). Dekarbonisierung in der Stahlindustrie

21 Agora Energiewende & Wuppertal Institut (2019). Klimaneutrale Industrie: Schlüsseltechnologien und Politikoptionen für Stahl, Chemie und Zement

22 ArcelorMittal (2022). ArcelorMittal breaks ground on first transformational low-carbon emissions steelmaking project

23 Ibid.

24 ArcelorMittal (2022). ArcelorMittal decarbonisation project in Hamilton, Canada confirmed with the announcement of a CAD$500M investment by the Government of Ontario

25 Canada Infrastructure Bank (2021). CIB invests $220M in Canada's steel industry to create jobs and build a cleaner future

26 European Commission (2022). The Possible Implications of the Green Transition for the Labour Market

27 National Post (2021). Union fears big job losses from going green, after Ottawa pledges $420 million to Algoma's electric retrofit

28 Government of Canada (2023). Sustainable Jobs Plan

29 National Post (2021). Union fears big job losses from going green, after Ottawa pledges $420 million to Algoma's electric retrofit

Authors: Larissa Oppermann (Guidehouse), Diego Bietenholz (Guidehouse)
Reviewers: Emma Krause (Guidehouse), Clara Casert (Guidehouse)

Publications Office
of the European Union