Intersessional Joint Meeting of the CTF and SCF Trust Fund Committees

Washington D.C. (Virtual)

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ACCELERATING COAL TRANSITION (ACT) INVESTMENT PROGRAM

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Joint CTF-SCF/TFC.23/6/Rev.2
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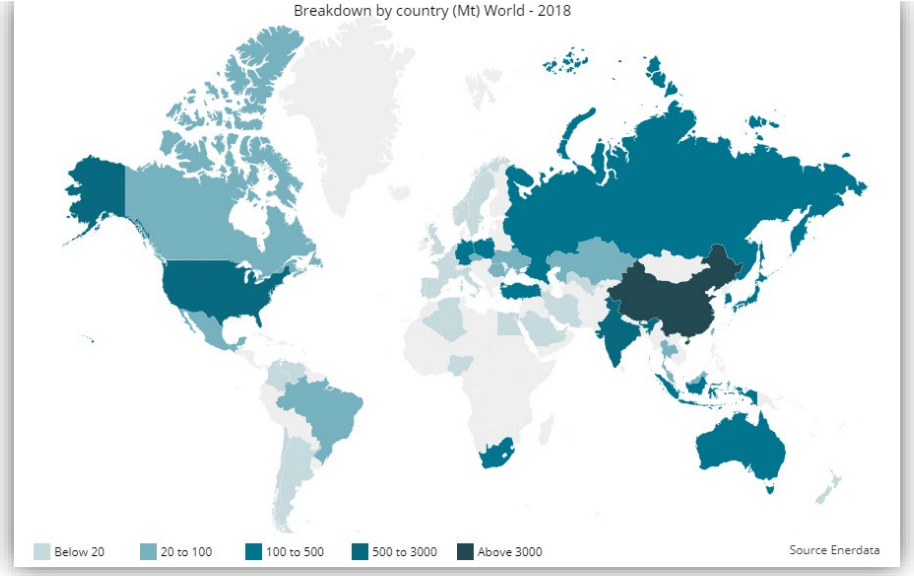
PROPOSED DECISION



Global coal and lignite domestic consumption (2018)

CONTENTS

1. INTRODUCTION

1. This note sets out the context and rationale for a proposed coal transition investment program, an indicative list of items that could be financed through this program, and an estimate of funding needed to support engagements in countries that have decided to phase out coal in the electricity sector.

2. CONTEXT AND RATIONALE

2. Despite the developments supporting transformation of the energy sector in recent times, energy-related carbon dioxide emissions have continued to rise over the last five years. Significant investment may be needed over the next two to three decades to help countries meet their domestic climate-related priorities. There is growing consensus that the most commonly agreed strategies towards an effective transition could include increasing electrification using renewable sources (such as that for power, transport and heating), improving energy efficiency, and assisting countries with their plans to reduce fossil fuel demand while managing the transition in coal regions in an environmentally, socially and economically sustainable manner.

3. In 2017, global coal production grew by 1% to 7585 Mt, accounting for 27% of all energy consumption and 38% of electricity generation[1]. Furthermore, there is approximately 2,000 GW of coal-based generation capacity worldwide. There are more than 15,000 active coal mines globally, heavily concentrated in South and East Asia where China alone produces more than 1.8 billion tons of coal per year from more than 10,000 mines; and India, Pakistan, Indonesia, Philippines and Vietnam produce another 561 million tons (2017).

4. From an energy mix perspective, five of the top ten countries in the world with the highest share of coal use as a share of total electricity consumption are located in the European and Central Asian region[2]. Reliance on coal as a source of electricity generation, which as a technology is limited in terms of its operational flexibility, has also influenced the design and operation of those countries' power grids. As a result, they face additional challenges in integrating other sources of electricity generation with more flexible characteristics.

5. While a phase out of coal is occurring, the process is slow given (a) a large existing stock of coal plants and associated mines ("coal assets") to be retired; (b) partial replacement with new coal assets often within the same region or on existing sites; and (c) limited economic alternatives to redeploy the existing coal and power plant workforce. Even though the ongoing pandemic has rendered many coal plants uneconomic, and added to the stock of plant closures, emissions from the existing plants may hinder countries' efforts to fulfill their domestic climate-related priorities.

[1] World's biggest coal producers: China, India, the United States, Australia, Indonesia, Russia, South Africa and Germany (2018).
[2] Kazakhstan, Kosovo, Mongolia, Poland and Serbia each produce more than 70 % of their electricity consumed from coal sources (Source: World Development Indicators, 2015).

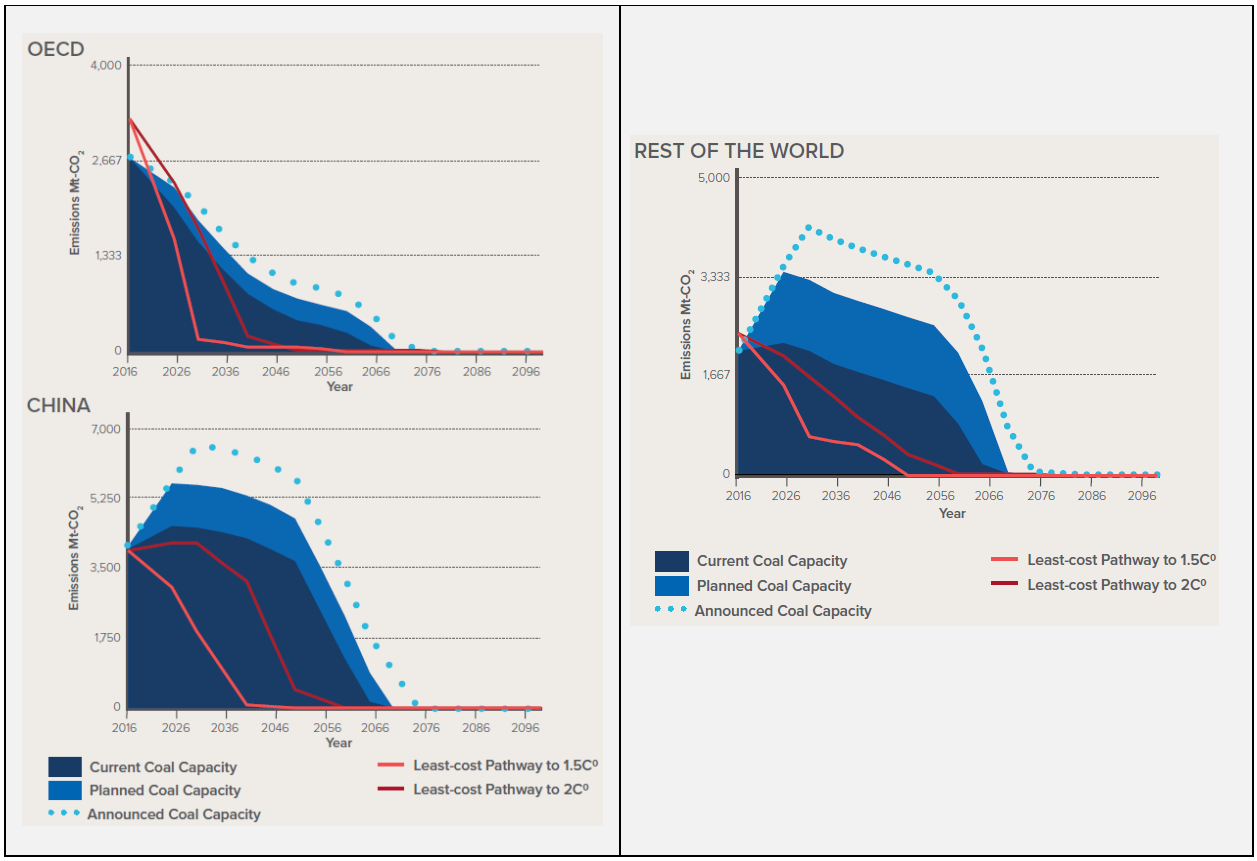


Figure 1: Potential CO2 emissions from existing and planned coal capacity against least cost pathways

6. The advent of low-cost solar, wind and (increasingly) battery and other energy storage technologies provides an opportunity for countries to re-evaluate new coal assets being built, repurpose existing assets which still have considerable life left, or decommission existing assets which are near retirement. Importantly, renewable energy, alongside natural gas and hydro, is eroding the commercial viability of coal, especially in older, inefficient operations.
7. There are also significant social, economic and political challenges to resolve. Coal regions are typically mono-industry areas, and transition may involve reorienting the structure of the economy itself. Developing country demand-driven regional transition strategies are key to identifying new labor opportunities for existing and future workforces of a coal region. Alongside these nationally driven efforts, there is the need to strengthen local and regional institutions to manage the transition, notably the capacity to implement large social protection, education and economic innovation programs.
8. The implementation of kick-start projects can provide important impetus to communities and governments to work together to effect coal sector transition in the electricity sector. Yet, many regions lack the funds to bring these projects from the conceptual to bankable phase, leaving many regions frustrated by the inability to demonstrate real progress in transition.
9. Important sources of capital in this regional transformation are the existing and former mining lands and their related infrastructure assets which can be repurposed and redeployed for new investments. Critical to this new approach to mine reclamation is the existence of spatial plans that

consider new land uses in conjunction with traditional forms of reclamation (such as agricultural lands, forests and ponds).

10. Such spatial planning exercises integrate a variety of land uses, including the possibility of repurposing power plants, electric systems, and other infrastructure for future renewable energy or alternative uses such as green buildings. For example, an innovative model that is worth exploring is the concept of converting existing coal plants to renewable and flexibility (RE+FLEX) centers for these plants to provide renewable energy generation and flexibility/ancillary services and retain part of the existing workforce to partially mitigate the social risks. This could involve repowering coal plants with renewable energy, energy storage and synchronous condenser mode of operation of the incumbent generator to provide reactive power. The repurposed site can therefore continue to provide part of the energy and a significant part of the frequency control and voltage support services that the original coal plant provided. The storage technologies could include a combination of, for example, batteries, thermal storage, pumped storage and other gravity-based storage, and green hydrogen.
11. In turn, these new uses of the existing infrastructure can be developed at the same time with productive land use and other projects that diversify the economic activity of the regions involved.
12. The multilateral development banks (MDBs) have a critical role to play in assisting countries to meet domestic climate-related targets, by securing affordable, reliable, and sustainable energy access for all.
13. Based on the MDBs' experience in supporting coal regions in their energy transitions, a dedicated investment program could assist countries and their coal regions to achieve their defined energy and socioeconomic transitions. The main objective of the *Accelerating Coal Transition (ACT) Investment Program* would be to address funding gaps leading to the successful implementation of national coal transition strategies and associated kick-start projects; building support at the local and regional levels to reconsider the development of new coal plants; and accelerate the retirement of existing coal assets together with new economic activities supported by new sources of energy. The program would look to support both public sector utilities and private sector operators with the relevant toolkit necessary to effect the transition, as appropriate and consistent with national priorities.
14. The abovementioned developments would need to be anchored in the recipient country policies, including increased greenhouse gas emission reduction targets in the energy sector, under the respective Long-Term Strategies, NDCs and the laws and regulations to be implemented.

3. COVID-19: UNPRECEDENTED CRISIS OR UNPARALLELED OPPORTUNITY

15. The Covid-19 pandemic calls for more creative approaches to financing a green economic recovery, including relating to the transition away from coal, in countries around the world. Specifically, large quantities of public funds, with varying degrees of associated conditionality, are being made available for recovery and stabilization efforts.
16. This indicates an opportunity for interested countries to implement carefully targeted energy transition programs as part of their recovery efforts. Furthermore, given the scale and scope of economic downturn, large public lenders have been asked to execute mandates that are outside of their traditional statutes. The time is ripe for strategic and targeted action.

17. While domestic political and regulatory considerations must factor prominently in the design of the optimal transition financing solution for any given country, certain overarching design principles should be considered. These include, but are not limited to:

    - Supportive macro-economic and fiscal environment
    - Minimizing the use of public subsidy
    - Demonstrable contribution to climate mitigation and adaptation
    - Maximizing "additionality" and/or avoiding "deadweight costs;" including considering perverse incentives, e.g. paying for closures that would have occurred anyway, or environmental remediation that would need to have been provisioned before
    - Maximizing speed of transition toward cleaner energy solutions as appropriate
    - Optimizing the simplicity of the financing solution as a means of increasing its replicability for other countries and regions

18. Experience suggests that the implementation of energy transition programs depends on addressing the concerns of owners and industry groups, as well as affected workers and associated communities concerned about the economic considerations of lost wages and livelihoods. To date, most transition schemes have focused on solving the challenges facing the first group but failed to offer reasonable solutions to the second.

19. Therefore, a successful coal transition strategy must also embed communities' economic and social considerations carefully into the fabric of its proposed financing architecture. This means ensuring that the program allocates dedicated resources, either on its own or more likely in partnership with other sources of national or multilateral funding, to support a compelling proposition to affected communities.

4. COUNTRY ELIGIBLITY

20. The focus of the Accelerating Coal Transition (ACT) Investment Program would be to support some of the major coal consuming and producing developing countries, including those where thermal coal is a dominant factor in the energy mix. During the implementation phase of the program, the process for the selection of countries (a number that would depend on available resources) would be undertaken in consultation with the MDBs. This would be based on a set of criteria which could include:

    - NDC or other policy instrument that outlines nationally driven goals for coal transition
    - Highest impact in terms of emission reduction potential and co-benefits such as air pollution
    - Demonstration effect both in its region and globally
    - Political commitment and country readiness to implement
    - Regional diversity

21. Finally, the selection of countries and underlying activities would also depend on readiness, feasibility, potential to mobilize private sector financing, country-level engagement assessments, and gender considerations, among others.

5. SCOPE

22. Depending on the selected site/s, the program will look to deliver on the Coal Transition Roadmap[3], developed by the host country, and finance relevant activities under the following pillars: *i) governance; ii) people & communities;* and, *iii) land, power plants, & other infrastructure* (see figure below).

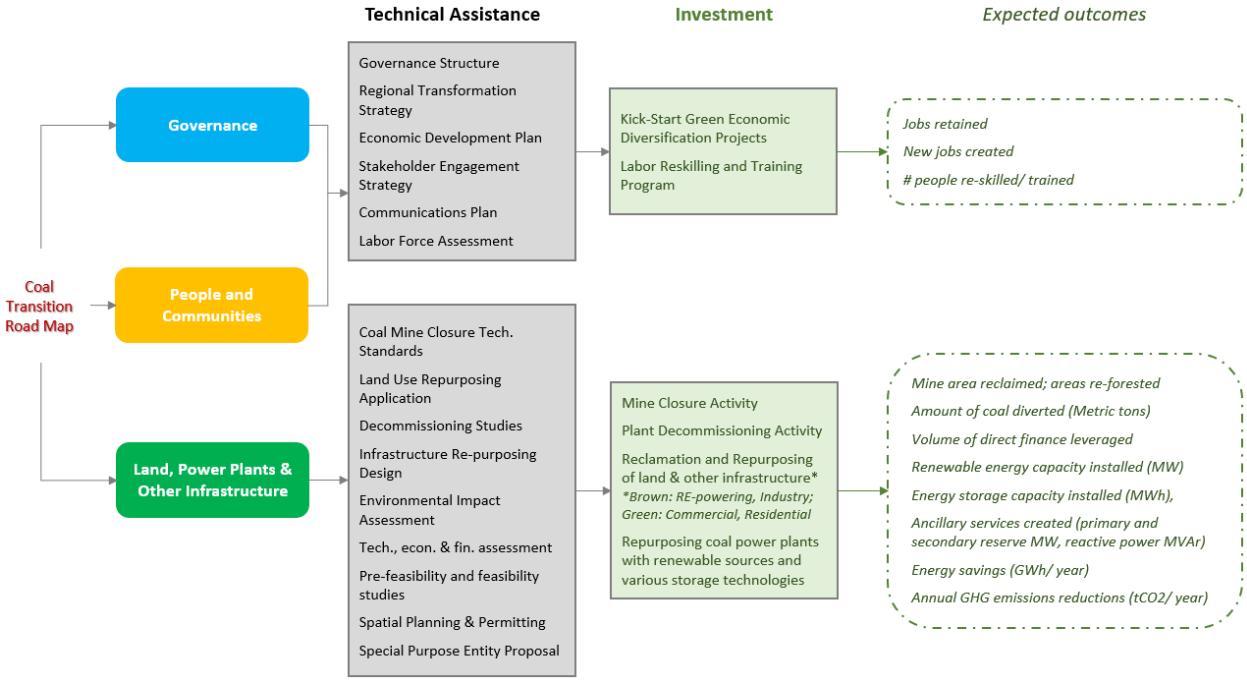


Figure 2 Potential activities supported by ACT Investment Program

23. The program would primarily focus on downstream investment activities financed using concessional funds from the CIF, as well as the MDBs' own resources, and other private or public financing. Upstream activities necessary to implement the downstream investment activities, such as the development of road maps, pre-feasibility and feasibility studies as well as other technical assistance (see Annex 1), can be supported by the MDBs through their individual initiatives (such as EBRD's NDC, Long Term Strategy and Low Carbon Pathway support, World Bank's Energy Sector Management Assistance Program (ESMAP)). Where such resources are not available, ACT-IP could fund such activities, upon MDB request, in order to facilitate implementation of activities downstream.

a. Governance

24. It is crucial to have country buy-in and commitment for transitioning out of coal assets. The government not only needs to provide a clear policy signal, but also ensure a well-coordinated implementation strategy across different agencies, as well as keep budgetary support aside for those affected the most by the transition.

[3] In appropriate cases this could be the country's NDC.

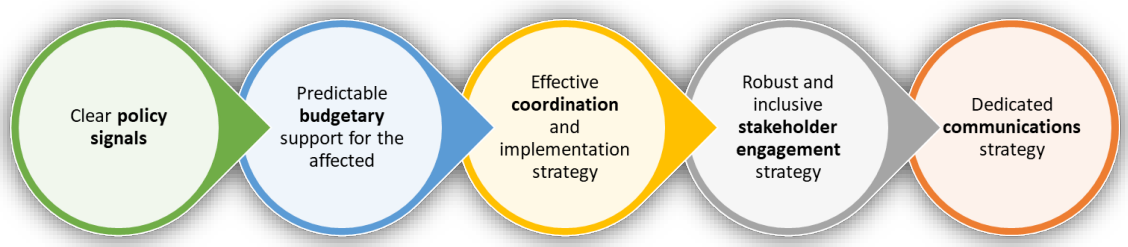


Figure 3: Strong governance strategy

25. Given the complex nature of the transition, more than one ministry and agencies are typically involved throughout the process. It is critical to identify and support relevant institutions, stakeholders and decision-making structures, both at the local and regional levels, in order to ensure effective implementation and sustainable achievement of key goals. This may include developing, in close consultations with key stakeholders, a transformation strategy, an economic and social development plan, communications strategy, among others, as part of implementation of investment projects.

b. <u>People & communities</u>

26. The coal industry ecosystem is vast and includes not only coal mines but also (i) coal users (e.g. power plants, industrial companies, district heating systems, or in some cases, transport companies and residential users); (ii) transport systems carrying coal from mines to users (e.g. railways); (iii) suppliers of goods and services to the coal mines; and (iv) in some cases, social assets that provided auxiliary social services that were owned and operated by coal mines.

Typical community characteristics

Narrow economic base *of a coal-dependent region exposes the fragility of the economy, in terms of job creation potential.*

Geographic isolation *of most coal mines means that the loss of the main regional employer reduces overall re-employment potential.*

Disparity of wages *between coal mining and alternative professions is often cited as a stumbling block to re-employing former coal miners.*

Coal mine identity *centers on strength, determination, hard work, and risk, which can be hard to shed thereby affecting re-employment.*

Indirect job losses *from subsidiary businesses accentuates the social and labor challenge if indirectly affected individuals are not considered as beneficiaries of temporary support or active labor market policies.*

27. A significant challenge to a transition away from coal- both mines and power plants- pertains to its workforce and the associated communities who are dependent on it for their livelihoods. These workers have spent a considerable period of their lives carrying out specialized functions at these facilities and/or depend on economic activities as a result of being located near such facilities. Women in particular may be affected, not just through direct job losses, but also through household tensions and gender-based violence on account of job losses of the men in the family.

28. By most estimates, the number of people employed by the energy sector is expected to increase. Many of these jobs are expected to be in coal dominated regions. However, both policy support, to ensure that for example social protection policies, labor market policies, educational and skills development policies are enablers of the transition as well as finance for investments will be required to facilitate this transition.

Figure 4: Core employability skills in the future energy sector (Source: ILO)

29. Active labor market policies can have a considerable effect on the employability of those not currently in employment. Such policies may include, depending on the demand for labor in the region, one or a combination of the following: (i) employment services such as labor exchanges, vocational counseling and mobility assistance; (ii) education and training like institutional training or on-the job training; and (iii) small business support services. These options carry certain trade-offs with respect to their typical costs per beneficiary and expected impacts, as illustrated here.

Active labor market policy	Typical costs per beneficiary	Mean impact on probability of employment		
		Short term	Medium term	Longer term
Employment services Labor exchanges Vocational counseling Mobility assistance	$15–$30 *(for labor exchanges)*	✓	✓	✗

Active labor market policy	Typical costs per beneficiary	Mean impact on probability of employment		
		Short term	Medium term	Longer term
Education and training Institutional training On-the-job training Comprehensive programs	$250–$1,000 *(for institutional training)* $700–$2,000 *(for comprehensive programs)*	✓	✓✓✓	✓✓✓

Active labor market policy	Typical costs per beneficiary	Mean impact on probability of employment		
		Short term	Medium term	Longer term
Small business support and subsidized employment Small business support Wage subsidies Community empoyment programs	$500–$3,000 *(for business support)* $300–2,400 *(for subsidized employment)*	✗	✗	✓ *(for community employment programs)*

Notes:

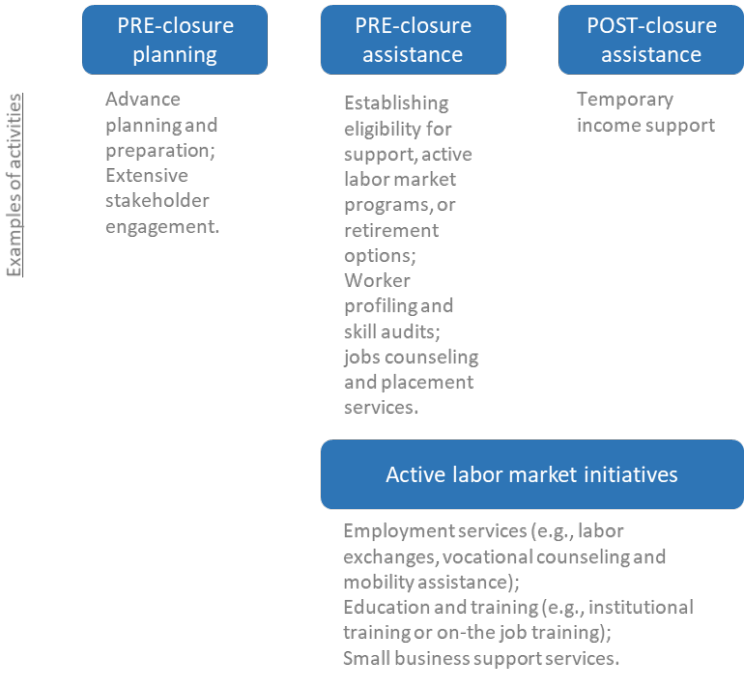
✗ *denotes an impact on a program beneficiary's probability of employment of less than 0.05 standard deviations*

✓ *denotes an impact of 0.05 to 0.1 standard deviations*

✓✓✓ *denotes an impact of at least 0.1 standard deviations, all according to the meta-analysis by Card, Kluve and Weber (2015).*

Source: Authors based on Betcherman et al. (2007) Card, Kluve, and Weber (2015), and Fretwell (2017).

30. The pillar around *People and Communities* will form an integral part of the program in line with the premise of ensuring a holistic approach to address the coal transition challenges. This pillar will focus on socio-economic measures to minimize the negative impacts to relevant stakeholders. It is expected that a substantial amount of the funding under each Investment Plan will be dedicated to projects that can ensure the goals foreseen under this pillar. Moreover, where possible, activities will strive to align with the COP24 declaration on Just Transition and other best practices including emerging MDB guidance and practices on the topic. Although support from CIF under this component will only be to climate-related activities (e.g. training offered by solar companies to develop technical skills), funds under this pillar are expected to be mobilized from MDBs' own resources for wider activities such as social protection/ job creation activities.

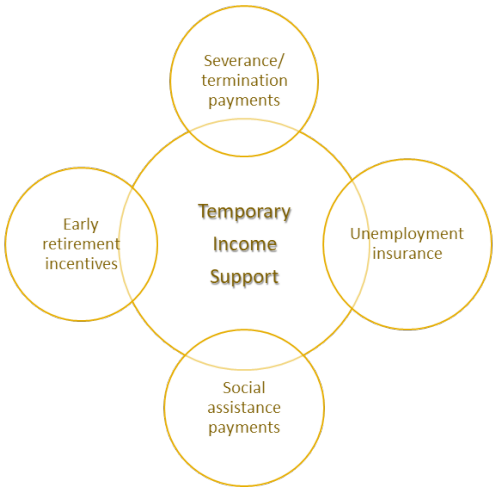


31. The program activities will also focus on both upskilling and re-skilling to help the people not only retain jobs where feasible, but also prepare for new jobs as available. Some of the activities included under this pillar may include the following:

- **Implementation of social plans** including funding support for labor retrenchment packages and reskilling/retraining packages, including a gender action plan; and

- **Economic regeneration stimulus package** with attention targeted to improved gender-balanced composition of the workforce of sunrise and sunset industries through the development of new productive activities to retain employees and create a source of income.

- **Income support** would also be within the scope of this program to sustain workers in instances where there is a gap in employment and would include temporary income support measures to help sustain workers.



c. <u>Land, power plants, other infrastructure</u>

32. The third pillar of reclaiming and repurposing the existing infrastructure, including land and power plants, will be a core area of support under this program.

33. Key barriers for a coal transition include the remaining life of plants as well as the underlying costs associated with reclaiming, decommissioning and ultimately repurposing the coal assets (mines and power plants). However, a strong case for a swifter transition can be made with reference to avoided CO2 emissions from early retirement of old, inefficient plants, along with potential repurposing using tested energy supply solutions (such as using RE plus storage).

34. Reusing existing infrastructure such as generator and substations could further reduce costs compared to a new plant; while depending on the specific case, it may also facilitate greater renewable energy integration in the grid. Finally, repurposing presents the opportunity to retain part of existing work force, while opening up opportunities for hiring newly skilled/trained additional work force.

Table 1 Sample costs and benefits of coal plant re-purposing

Costs	Benefits
Direct costs: • Employee costs, station overheads as well as O&M expenses post retirement • Environmental regulation, such as asbestos & hazardous material abatement • Demolition of plant and scrap removal, incl. equipment and machinery • Coal combustion residuals (i.e., ash/ residue ponds) clean up • Coal storage areas clean up *Indirect costs:* • Contingency costs, such as unanticipated environmental costs • Lost local (city, state) tax revenue *Additional Repurposing costs:* • Remaining capital expenditure (CAPEX) on the coal plant • Remaining operational expenditure (OPEX) margins on the coal plant • Social costs, such as temporary income support for employee rehabilitation.	*Physical benefits:* • Salvage value/scrap value of coal plant machinery • Land reutilization • Equipment (i.e., switchyard, substation) reutilization • Remediation benefits i.e., reduced remediation costs • Transmission and interconnection evacuation reutilization • Reactive power benefits with SynCON by retaining system balancing services *Environmental and Social benefits:* • Carbon benefits • Health benefits • Water benefits • Re-employment benefits

35. The program will provide funding for reclamation, decommissioning and repurposing of the coal assets. Both brownfield (e.g. repowering, industry) and greenfield (e.g. commercial, residential) options can be considered for repurposing depending on location and feasibility of potential alternatives. Under repurposing, repowering, using existing or innovative technologies, will be a major area of support.

36. Based on the identified list of the most effective, efficient and high-impact activities at the plant-level, one or more of the following areas may be supported by the program:

    - ***Renewable energy:*** Power generation using renewable sources of energy such as solar, wind, or a combination with storage will be eligible to take advantage of the existing infrastructure on the site and to replace the baseload power from the coal power plant with flexible clean energy. The choice of the technology or the mix of technologies will be guided by plant-level studies to determine the feasibility and viability of the proposed activities.

    - ***Ancillary services****:* The existing generator can be retained to provide reactive power service that is critical for maintaining voltage level and voltage stability, especially in a power system with high share of variable renewable electricity (VRE). Alternatively, a battery/thermal/pumped storage system can also provide frequency control service. If the existing site can effectively become a flexibility center to replace much of the ancillary services that the original coal plant was providing, it will ensure the power system can continue to operate securely.

    - ***Energy efficiency****:* Depending on location and use, not all sites may be suitable for power generation, and other economically productive alternatives may need to be considered. The CIF, through the Clean Technology Fund (CTF), has supported the development of energy efficient buildings that result in greenhouse gas emissions reduction while promoting sustainable methods of construction in countries like Mexico and Turkey. Building on such experience, and where deemed feasible, the ACT-IP could also support the development of more energy efficient buildings including on the site previously used for mining or other associated practices. Such support will be contingent upon such buildings adhering to strict international standards such as LEED, IFC's EDGE or others, with a clear goal of reducing greenhouse gas emissions.

    - ***Biodiversity****:* Options such as reforestation/afforestation activities can be particularly relevant in the case of coal mines given their sequestration role. Such activities could also be supported by biomass-based generation depending on the site. Other activities could also include restoring the quality of soils / ecosystem to their pre-mining level (e.g. pastures or other ecosystems); uprooting of invasive plant species used for land stabilization; biodiversity offsets (in cases where the mined areas had a high-biodiversity value and land restoration is not an option) etc. On the upstream side, some of the activities that could be considered by countries may include , among others, policy reforms and institutional strengthening related to environmental regulatory procedures and requirements for mine closure and related financial assurance; and to systems and capacity at national, regional and local level to sustainably protect rehabilitated sites.

37. This is an indicative list of activities which will depend on a range of local considerations depending on the selected country and sites.

38. The program funds will support relevant activities identified above across the three key pillars in the selected country(-ies). Such funds will be offered in the form of co-financing, together with MDBs' own resources, as well as with other financing partners (such as bilateral sources, private sector,

among others). With additional support, the program could be broadened to include a higher *number* of potential countries and achieve a greater scale of transformational impact.

39. The program will look to build on the CIF experience by offering a flexible toolkit to demonstrate innovative solutions- instruments, technologies and business models. It will look to offer concessional funding, including grants, equity, guarantees, and loans, among others, to support underlying climate-related activities at the selected sites. Building on the key CIF principles of flexibility and concessionality, a detailed financing plan that is specific to each country's context will be developed at a more advanced stage once the target countries have been selected and operational modalities determined.

40. Concessional funds from CIF have long been used to drive innovation. The program will look to continue that effort and encourage new ideas to accelerate clean energy investments. Among others, these could include use of development policy loans[4], results-based finance, and other options to effect high-impact transformational change.

6. PRIVATE SECTOR

41. Targeted application of concessional finance (i.e. long tenors and/or low rates), especially at scale, have been shown to lower investment costs and risks, while supporting first-of-their-kind technologies and business models. Such risk-bearing capital can facilitate private sector participation and mobilize additional sources of financing while demonstrating viable alternatives to transition away from coal.

42. Countries that publicly commit to an expedited closure or repurposing of significant amounts of existing coal capacity send an important and powerful market signal to private investors while creating a range of investment opportunities:

    - there may be ways for investors to benefit as bondholders in restructured utilities that are moving from their current, expensive, unsustainable and high-cost of capital coal posture to a more efficient, predictable and reliable lower-carbon holdings.
    - any meaningful reduction in coal generation will need to be replaced by a rapid and predictable expansion of clean and renewable energy, creating significant investment opportunities

43. For example, coal plant site repurposing to develop RE+FLEX centers may provide significant opportunity for the private sector including development of solar/wind, battery, heat or air pressure storage facilities. In addition, battery and synchronous condensers can inject substantial frequency and voltage control services for the power system. As the ancillary services market develops around the world, the latter presents major revenue streams for the project especially as demand for such services increase in high-VRE power systems. Likewise, the development of related activities that are promoted by these alternate uses of plants and coal mines may be of investment interest to the private sector.

44. The program would look to support both public sector utilities, private sector operators, developers in the built environment and financial services providers with the relevant toolkit necessary to affect the transition. Furthermore, consistent with the principle of leveraging public finance, the key focus here would be to mobilize private sector participation as well as sources of financing. Concessional

[4] In the case of World Bank, a development policy loan is a financing instrument that supports the design and implementation of a program of policy and institutional reforms for a client, while providing rapidly disbursed, non-earmarked financing.

funding from the CIF can be used to mitigate and spread risks, both real and perceived, thereby ensuring more efficient use of limited public resources. As mentioned above, the program would strive to offer necessary flexibility and use of innovative ideas such as results-based financing, risk capital for nascent technologies among others, in order to facilitate private sector participation.

45. A dedicated *CIF Climate Ventures* window has been envisioned for new CIF programs to provide MDBs with the flexibility, incentive, and risk capital required to support innovative and early stage ventures holding the potential to generate transformative climate initiatives that they would not be able to undertake with their resources alone. In this case, such targeted concessional finance for frontier innovations in technology, business models, and market approaches, can prove to be particularly useful for downstream activities during the *repurposing* phase. As currently envisioned, such a window could be supported through a small allocation under the new program. While the current proposal indicates an allocation of 5% percent of total program funds for other new strategic programs, given the scope and scale of the program, this figure may change commensurate with the final funding envelop and potential demand.

46. Annex 2 includes examples of some of the models deployed to facilitate private sector participation in a transition program, both on the *fundraising* and *fund deployment* sides. Other models seeking to leverage limited public finance in order to engage the private sector could be considered, depending on the local context and factors such as maturity of markets, availability of finance, presence of an enabling environment, among others.

7. CIF IMPLEMENTING AGENCIES

47. CIF will look to deliver concessional resources for this program through its existing partner MDBs, namely the African Development Bank, the Asian Development Bank, the European Bank for Reconstruction and Development, the Inter-American Development Bank Group, and the World Bank Group, including the International Finance Corporation.

8. BUSINESS MODEL

48. The proposed investment program will look to build on the most relevant and impactful features of the CIF business model. The Climate Investment Funds (CIF) were established in 2008 to provide scaled-up climate finance to developing countries in support of low-emission, climate-resilient development. CIF's business model is characterized by five main features:

    - Country-led programmatic participatory approach enabling the design and implementation of strategically linked investments aligned with national priorities and building on existing efforts and strategies
    - Delivery of financing through multilateral development banks (MDBs) working together in a coordinated manner to support the implementation of coherent large-scale investment packages for cross-sectoral interventions responding to countries' priorities and objectives
    - Large-scale investment packages helping to create or deepen markets, stimulate private investments, and drive policy reform
    - Scaled-up, predictable, and flexible envelope of concessional resources
    - Consideration of system transformation and social inclusion at the outset

49. The *programmatic approach* is a core design element of CIF's business model and integral to CIF's ambition to achieve transformational change. It is centered around country-led investment plans and thematic programs—supported by MDBs' collaboration, informed by multi-stakeholder

consultation, and associated with a scaled-up, predictable, and flexible resource envelope—that set out strategically linked investments, unified by a transformative vision.[5] It brings systems-level thinking and solutions to help countries meet their climate ambitions. In a complex, multi-stakeholder, multi-dimensional undertaking such as coal transition, which touches upon social, economic as well as political issues, such an inclusive approach will be especially effective in delivering results on the ground.

50. As mentioned earlier, the MDBs are committed to increasing clean energy, sustainable land-use and other green infrastructure investments as well as increasingly focusing on their role in mobilizing domestic financial institutions and catalyzing private finance. This priority is reflected on the ground. In 2018, development banks represented the largest single foreign investor group and deployed a record volume of capital for clean energy[6]. CIF's multi-MDB co-financing platform supports their strategic priorities and leverages their strong and continuous presence in host countries, together with sectoral expertise, experience, safeguards and other policies which, in turn, multiplies the scale of impact on the ground.

9. GOVERNANCE STRUCTURE

51. The guiding principles in determining the governance arrangements for the ACT Program are simplicity of implementation, effectiveness and the assurance of a wide scope of funding sources and lending instruments. Thus, a proposed framework for the governance of the ACT would allow for flexibility to fund projects from different types of contributions including concessional loans.

52. The ACT is in line with the strategic objectives of the CTF which aims to finance transformational actions by: (a) incentivizing low carbon development and mitigation of GHG emissions through public and private sector investments; (b) promoting scaled-up deployment, diffusion and transfer of clean technologies by funding low carbon programs and projects; (c) promoting realization of environmental and social and economic co-benefits thereby contributing to sustainable development; (d) leveraging the MDB-partnership and other climate funds to mobilize additional resources at scale; and (f) offering experience and lessons as a learning laboratory with more than ten years' experience on the cutting edge of climate finance innovation.

53. Some potential donors to the ACT have indicated a preference for contributing in the form of concessional loan resources. The current structure of the Strategic Climate Fund (SCF) Trust Fund does not provide for the acceptance of loan contributions, only capital and grant contributions; whereas the structure for the Clean Technology Fund (CTF) Trust Fund does accept loan contributions[7].

54. The CTF has established a successful track record in managing and implementing programs such as the Global Energy Storage Program (GESP) and the Dedicated Private Sector Program (DPSP). It is therefore proposed that the ACT is established within the current CIF governance, under the CTF.

55. Establishing the ACT under the CTF provides the following advantages:

[5] Other key features of CIF's programmatic approach vary by CIF program. For the Strategic Climate Fund, other key features include the identification and use of an institutional structure to coordinate the country program, support for additional readiness activities, regular stakeholder review meetings, and knowledge and learning activities at the program level.
[6] BNEF's Climate scope 2019
[7] A new loan contribution can be provided with the consent of all Contributors to CTF and the Trustee.

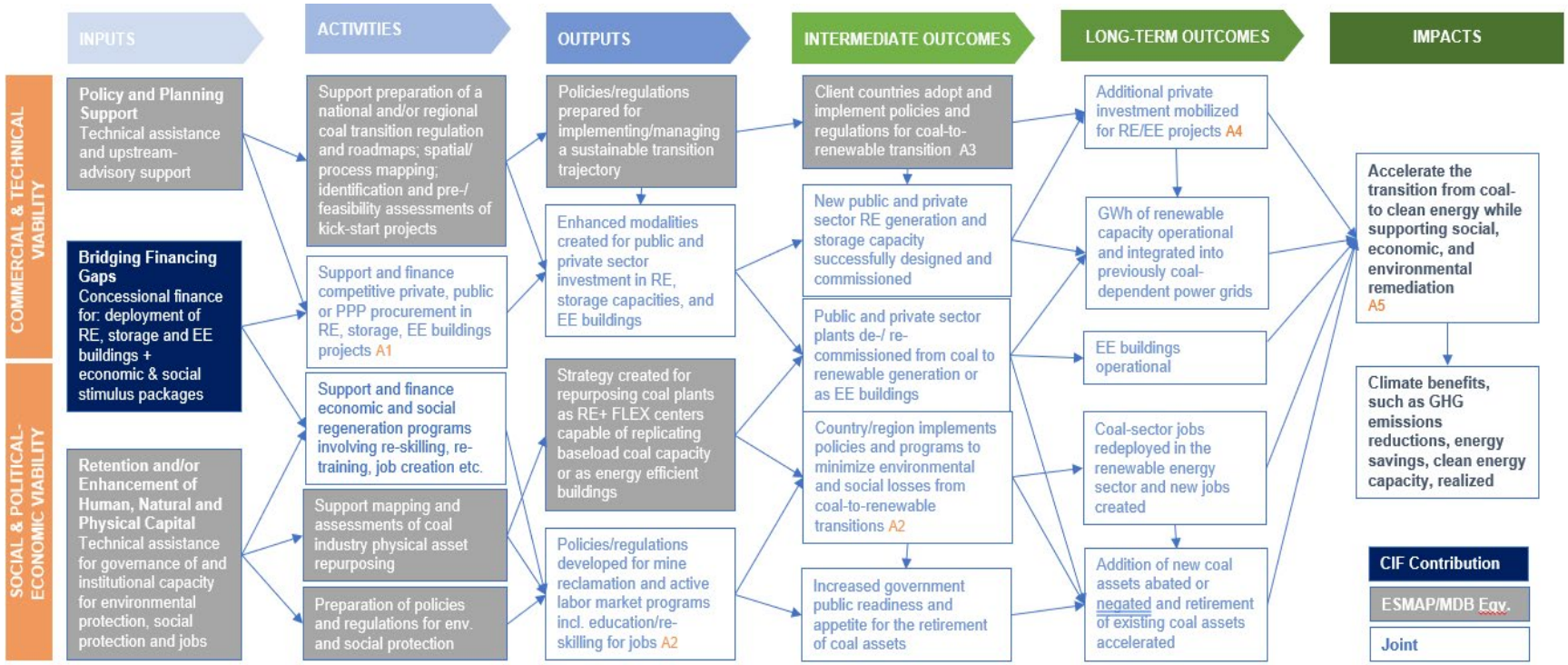
- Possibility to accept contributions in the form of concessional loans, as well as capital and grants.[1] The CIF Administrative Unit, in line with the established pipeline management process, will track and report on the use and programming of resources for the ACT;
- The CIF Administrative Unit, in line with the established pipeline management process, will track and report on the use and programming of resources for the ACT;
- No need for changes to the current governance framework document for the CTF, as the ACT will be considered a window.

10. KEY RISKS

Key risks	Mitigation
Reputational risks, such as due to work forces being made redundant due to coal transition or perception of providing subsidies to the coal industry to accelerate coal phase out.	The program aims to deliver a suite of holistic solutions targeting *governance, people* and *infrastructure* to support a coal transition. The pillar around *People and Communities* will form an integral part of the program. Supporting activities are expected to align with global best practices including on Just Transition. Taking advantage of the CIF-MDB partnership model, projects supported by the program will adhere to MDB safeguards, environmental and social frameworks and will involve extensive stakeholder engagement, along with a strong emphasis on socio economic measures ranging from upstream planning and design to more downstream social plan implementation. This will aim to address concerns of affected people and communities who are dependent on the coal assets for their livelihoods. A dedicated communications strategy, along with planned knowledge sharing activities, to highlight the key goals of the program will help mitigate such concerns.

Political risk, such as a change in a country's political will or priorities regarding commitment to coal transition during implementation stage.	The program will aim to identify countries based on their political commitment and readiness to implement the underlying activities. This can be through a country's NDC or a similar policy instrument that identifies transition as a priority. During implementation, a robust pipeline management and cancelation policy, such as the ones used for existing CIF programs, will make sure that the use of proceeds are consistent with goals of the program identified at the time of approval. Any change(s) that impact(s) one or more key objectives of the program will result in a cancelation of the acitivity(-ies) and return of funds to the CIF. The process of inclusive stakeholder engagement at all key levels and comprising state and non-state actors along with integrated nature of the investments with a strong focus on people and communities as well as a strong communications strategy aims at guaranteeing ownership and sustainability of the reform efforts.
Technical risk, such as legacy/hidden issues.	The program will offer technical support where needed for upstream due diligence in order to identify any such issues and plan for a mitigation strategy in the early stages of the implementation process.

11. THEORY OF CHANGE



Assumptions:

- A1. The results chain may differ based on specific country contexts and may be different for individual projects
- A2. The client country exhibits and exercises commitments to accepted environmental and social protection objectives
- A3. International commitments to climate change mitigation, as well as national targets for clean energy, continue to drive country-level action.
- A4. There is availability of local and/or international investment potential for clean energy in developing markets
- A5. Clean energy technologies continue to be increasingly competitive against fossil-fuel alternatives, and the viability of renewable energy generation, storage, and EE buildings is demonstrated.

56. The investment program seeks primarily to address two key market failures identified as pivotal to the coal-to-clean transition, alongside positive externalities in several other areas.

a. Market failure 1- Establishing commercial & technical viability in a carbon constraint economy

57. For a sample 1000MW plant, the net economic benefit of reduced CO2 emissions from generation alone would total an estimated US$120 million, vs. an average decommissioning cost of US$0.1m/MW[8]. Summed with the carbon and pollutant costs of extraction, and alongside the related health benefits, this is enough to tip the cost-to-benefit scale. However, for emerging economies with entrenched coal-based economies and know-how, such a transition also poses a sizable cost quotient for bridging institutional and capacity gaps— in spatial and chronological planning; technical and financial estimation and forecasting; and the deployment of necessary policy and regulatory changes. Once addressed, taking projects from concept to commercial close, and at competitive prices, requires presenting an attractive risk-to-reward proposition to prospective investors. Due to the inherently more volatile currency, political and macro-economic characteristics of many emerging economies, delivering competitive and bankable projects requires lowering the risk profile of projects and offering tested modalities for investment. This program addresses these via a suite of interrelated products:

- **National and regional coal transition regulation and roadmaps; spatial/ process mapping; identification and pre-/ feasibility assessments of kick-start projects**

  Technical assistance: The development of country-led coal transition road maps will lay the foundation and buy-in for long-term trajectories that are complementary to national economic priorities and capacities. In doing so, they will formalize a step wise scaling plan that will eventually lead to national and regional-level transformation, and will allow stakeholders – utilities, private sector, and the public at large - to anticipate and respond to evolving economic dynamics. The inclusion of capacity and procedures for social dialogue and inclusive, participatory planning will ensure that the population is poised to contribute to and steer long-term planning, and to capitalize on positive externalities.

  In-depth and sound technical and financial feasibility analyses will consider across-the-board risks, and present robust scenario analysis, thereby enhancing governments' and utilities' ability to make informed decisions at every stage, with transparency regarding gaps and the necessary responses. Support for regulatory and policy change will capitalize on an MDB's experiences to enhance the bankability and step wise regulation of capacity additions, ensuring reliability of the grid in the face of VRE, and affordability to the end user.

- **Support and financing for competitive private, public or PPP procurement**

  Technical assistance and concessional financing: MDBs will leverage tested experience in deploying financing modalities in emerging markets, with country-specific financing structures and risk-distribution mechanisms made available to national ministries and utilities. Concessional financing from CIF will work to bridge the risk-to-reward ratios in emerging markets, thereby triggering "kick-

[8] US estimates, with emissions priced at $20/t$CO_{2e}$

start" projects that, once proven in viability, provide the demonstration effects of triggering a proliferation of similar projects, thereby keeping investment in pace with national road maps.

b. Market failure 2- Establishing social and political-economic viability

58. The decommissioning of existing coal assets requires that the government and civil society are well positioned to minimize losses and capitalize on gains. Where large swaths of the workforce are dependent on the coal-generation value chain, and where significant capital has been invested in coal-related infrastructure, far-reaching and well-founded economic and social regeneration programs can support a smooth transition of physical and human capital from one industry to another. This includes minimizing losses and maximizing gains for: the economy, due to early retirement of viable coal assets; the labor force, due to the shifting requirements in skillsets; and the country at large, of the potential environmental gains from cost-comprehensive mine reclamation. In the long-run, the proven economic and environmental gains of such repurposing and reclamation will also allow for greater buy-in from both the government and the wider public for the continued phasing-out of coal assets.

- **Support for mapping and assessments of coal industry physical asset repurposing**

  Technical assistance: At the plant level, this will include detailed studies and testing to identify and enable the repurposing of plants for either renewable energy generation (solar, wind, geothermal, etc.); and/or storage capacities (battery/thermal/pumped, gravity-based storage, green gas, etc.); or where the former are not possible, for the construction of green buildings that have potential for serving as economic hubs with reduced emissions. In sum, they will provide empirically grounded strategies for long-term maximization of the gains of mine and plant repurposing. At the mine level, environmental assessments and planning for mine reclamation will mean that stakeholders are informed and poised to maximize natural-capital gains from the closure of mines, which will also enhance the prospects of economic equity and viability of the transition roadmaps.

- **Preparation of policies and regulations for environmental and social protection**

  Technical assistance: Once feasibility assessments are complete, MDBs will work with national governments to design short and long-term social assistance and environment protection programs, translating concepts to action via policies and programs. In the long-term, this provides governments with mechanisms to ensure social protection in the face of change; the workforce with opportunities to bridge the human-capital needs for participating in forward-looking, clean-technology labor markets; and in sum, the maximizing of benefits from, and therefore support for, the shift from coal to clean technology.

- **Support and finance economic and social regeneration programs**

  Technical assistance and concessional finance: CIF will make available grants and concessional financing to realize the policies and programs as outlined above. In the long-term, as the viability of the transition is demonstrated, the related human-capital additions and social protection mechanisms will likely be self-sustaining, and function in step with the transition. Until such time, concessional finance will help bridge risk-to-reward concerns, and kick-start demonstration projects for economic and social transition.

12. EXPECTED OUTCOMES

59. Below are some of the expected outcomes depending on the nature of the activity being supported:

- Enhanced Long-Term Strategies, NDCs and/or policies implemented
- Amount of coal diverted (Metric tons), as a result of coal plant retirement/re-purposing
- Annual greenhouse gas (GHG) emissions reductions (tCO2/ year), or the net change in GHG emissions measured in tons of carbon dioxide equivalent (tCO2eq), estimated relative to the assumed business-as-usual emissions trajectory (i.e., baseline), over the lifetime of the investments, as a result of ACT interventions
- Reduction in air pollution from coal-based generation
- Volume of direct finance leveraged through CIF funding – disaggregated by public and private finance, including those that may come from the MDBs, bilateral agencies, governments, commercial banks, investors, local and international companies, foundations, and nongovernment organizations, among others
- Renewable energy capacity installed (MW) and energy storage capacity installed (MWh), measures total installed capacity of electricity or heat generation by renewable energy as a result of the program's interventions; where applicable, it will also include the installed capacity of energy storage components installed as a result of the program's interventions
- Ancillary services created (primary and secondary reserve MW, reactive power MVAr), as a result of kick-start projects financed on the re-purposed sites involving such interventions as mentioned above
- Energy savings (GWh/ year), measuring by the increased energy efficiency as a result of ACT interventions; in this case, through the support for energy efficient buildings (a.k.a green buildings) on the repurposed site
- Employees retained, to support activities on the new plant site who were previously employed at the old coal plant
- New jobs created at the repurposed plant

60. The CIF will provide detailed guidelines on the necessary indicators and results framework once they have been finalized in consultation with the partner MDBs. This will include the parameters for defining, measuring and reporting results.

13. ANNEX 1: POTENTIAL ACTIVITIES REQUIRING TECHNICAL ASSISTANCE

61. Coal plant or coal mine retirement/repurposing

- ***Identification of candidate kick-start coal plants or coal mines***. For the case of coal plants, this involves a power system planning analysis that can be retired/repurposed. For the case of coal mines, this involves an analysis of the feasibility of reforestation/afforestation and biomass power use purposes *(ESMAP/ MDB-equivalent)*.

- ***Technical assessment***: site inspection to assess the condition of the existing facilities. Plan and cost estimates for civil works needed for decommissioning of existing equipment or mines, in compliance with regulations and site preparation *(ESMAP/ MDB-equivalent)*.

- ***Coal re-purposing***: Detailed **plant-level testing** to identify the changes needed to the generator to provide requisite ancillary services (including reactive power in synchronous condenser mode). Design of the package of options, namely some combination of solar, battery storage, synchronous condenser as the core components *(ESMAP/MDB-equivalent)*.

- ***Detailed decommissioning studies*** for plants or mines that are identified as good candidates for early retirement or abandonment *(ESMAP/MDB-equivalent). This includes a review of the current obligations and national/project sponsors' budget to implement decommissioning and restoration (where this is agreed)*.

- ***Economic and financial assessment*** for specific projects or groups of projects that would need to look at the costs and benefits of coal decommissioning/repurposing projects. Repurposing the site to use it for clean generation and storage and reusing the generator for reactive power production would retain/strengthen the benefits and reduce the decommissioning costs. Similarly, repurposing the mine to use it in the future for clean generation, storage and/or green chemicals would reduce the decommissioning costs. These savings can be significant in economic and financial terms. There would be indirect benefits in terms of facilitating integration of substantial amount of additional renewable energy generation to the system. More importantly, the social benefit of retaining a part of the workforce can be immense in socio-political acceptance of a decommissioning or abandonment project. *(ESMAP/ MDB-equivalent).*

- ***Carbon Market,*** including voluntary carbon markets research and pricing analysis, and design of methodologies to account for carbon emissions reduction due to coal assets replacement/repurposing.

- ***Environmental impact assessment*** including detailed process maps and costing and institutional mapping for different options (retirement, redevelopment, re-purposing) *(ESMAP/ MDB-equivalent).*

- ***Gender and social policy and strategy*** preparedness assessment; including mapping of: i) institutional linkages to Ministry of Women's Affairs or equivalent, gender focal points in line ministries (including in Social Protection and Labor, and Education ministries, as well as Environment, and Energy); ii) expected poverty impacts of the transition, including social and gender-based care burdens for workers affected directly and indirectly by the energy transition; and iii) policy mandates and measures to ensure gender equality outcomes in skill development and workforce transition *(ESMAP/MDB-equivalent).*

- ***Support for regulatory reform*** such as i) energy tariff reform that would support the sustained coal transition, ii) design of policy incentives to focus on energy efficiency measures in those groups affected by potential energy price developments, iii) avoidance of overlapping policy impact, among others.

62. Post-coal regional transformation

Preparation of regional transition plans/ identification of kick-start projects *(ESMAP/MDB-equivalent)*

- ***Spatial mapping*** and technical assessment of coal mining lands and associated infrastructure detailed within a plan having alignment to higher-level spatial development plans and objectives regarding other economic activities for the development of the region.

- ***Mapping*** of relevant stakeholders (including local / regional / central governments, organized and informal labor across the coal value chain, community members and non-governmental organizations, including women's organizations) as well as existing or potential economic activities that could be magnified or created, for ensuring inclusive / consultative growth processes.

- ***Governance assessment*** of institutional capacities and decision-making structures, together with a mapping of roles & responsibilities of key agencies for planning and preparedness at all levels of service delivery. This would include capacity and scope for social dialogue processes and inclusive participatory planning processes for the transition.

- ***Social protection assessment*** of readiness and completeness of short and long-term social assistance programs, active labor market programs, and education and reskilling programs targeting jobs of the future including gender assessments of gaps between women and men in education, skills, employment, and participation rates in new or similar jobs-related programs; and measures to reduce gender imbalances in impact of proposed interventions.

- ***Environmental assessment*** to design and cost comprehensive reclamation of closing and/or closed coal mines, including the level of pollution/leakages and hazardous chemicals; and

- ***Identification and pre-feasibility of kick-start projects*** across (a) social protection and jobs education and re-skilling; (b) green economic diversification and generation of new livelihood opportunities; and (c) repurposing of land and physical assets in the coal mining regions; including proposed models for sustainability and implementation modalities.

14. ANNEX 2: EXAMPLES OF MODELS DEPLOYED

63. Several models can be deployed by the MDBs to implement and ensure the delivery of key objectives under the program. These will depend on a number of local factors and scenarios. Some such examples are listed below for reference. There may be other models that are considered by the implementing MDB depending on the project specific context.

Fund raising

Example 1: 'Public private blended finance vehicle' model

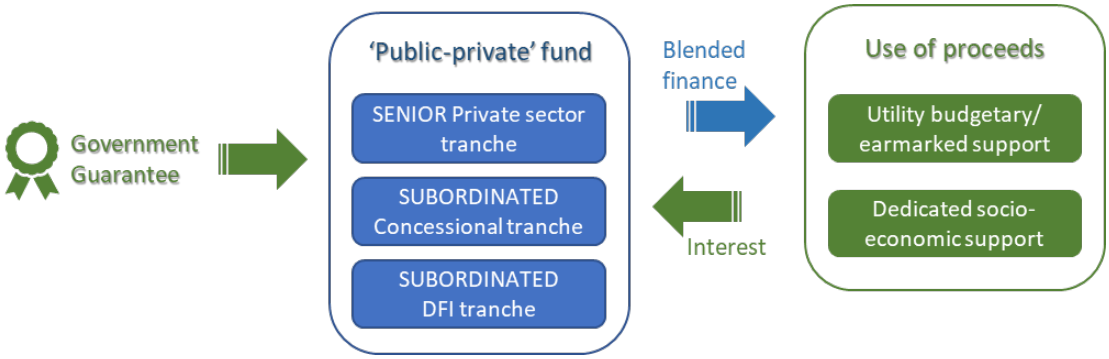
64. Different models of public-private partnerships have been tested, and successfully, in the delivery of public goods both in the developed and developing country contexts. Such models have a number of benefits including, but not limited, to the following:

- Ensures *risk-sharing* when it comes to new technologies and sectors.

- Ensures *efficiencies* both for public sector through private actors' capacity and operations, as well as private sector by providing predictability and certainty.

- *Leverages* limited public resource to increase the scale of intervention and potential impact.
- Supports the creation and *capacity* of local infrastructure development industry.

65. Applied to coal transitions in developing countries, one such model involves the creation of a *public-private blended finance investment vehicle* with potential partial backing by a sovereign guarantee, to support the country's transition objectives.



66. This model may be particularly attractive in markets where there is a vertically integrated national utility with high coal dependency experiencing financial hardship and carrying a significant high-cost debt burden. South Africa might be an example, with ESKOM as the aforementioned utility in continual financial difficulties.

67. Under such circumstances, a blended finance structure could effectively provide a lower cost of capital to ESKOM, or its Government guarantors, in return for; (a) commitment to a meaningfully expedited closure of existing coal assets and; (b) a corresponding national commitment to a rapid build out of clean and renewable energy to fill the coal generation reductions. In short, in return for access to a long-term flow of lower cost debt, the country commits itself to a clear, predictable, and ambitious pathway of decarbonization.

68. Indeed, initial figures from the South Africa transaction under development suggest that a transaction of this sort could result in >1 GW of carbon abated over business as usual at a cost per ton to public funders of less than USD 2-3. Funds from this investment vehicle, with a senior tranche from private sector sources and a subordinated concessional finance tranche to lower the cost of capital, can be used to support the country's efforts to address its power sector priorities, including greening of the grid. Funding could also be dedicated to meet its socio-economic objectives to ensure that the transition to cleaner sources of energy is inclusive and does not leave affected people and communities behind.

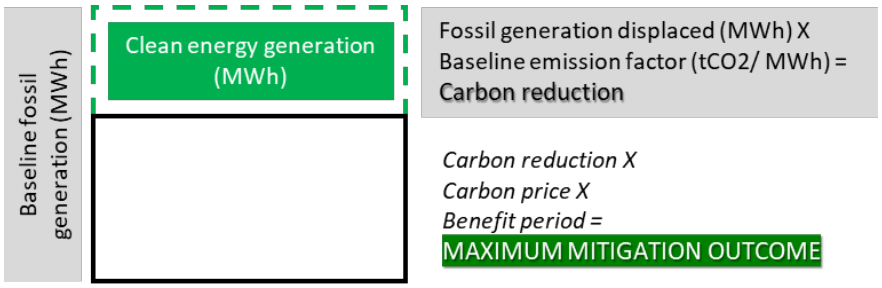
69. Such a model is capable of leveraging limited public finance and raising the level of ambition in terms of potential impact of the program. The large pool of resources can then be used to provide a more holistic solution covering the three key pillars around governance, people and communities, and infrastructure.

Fund deployment

Example 2: Voluntary 'decarbonization pricing' model

70. Concessional finance can play an important role to incentivize the companies that are considering a *voluntary decommissioning* of coal fired power plants in the next decade, especially in coal-importing countries in pursuit of their climate goals.

71. This mechanism would deploy a financial instrument that supports the decarbonization activities, by monetizing a clean technology project's actual displacement of CO2 emissions of existing fossil fuel fired power assets. The baseline to calculate the benefit is the volume of avoided CO2 emissions by accelerating the decommissioning of the replaced asset, which in turn is replaced by the clean technology project[9] to supply an equivalent volume of zero-carbon energy, through the remainder of the useful life of the replaced asset. The benefit will be received as additional revenue for the clean technology project, like carbon certificates, through a discount on the concessional financing's interest rate[10].



72. In the absence of a carbon market or pricing mechanism, the voluntary mechanism will support the decarbonization activity through the provision of monetary cash benefits through the ACT tranche of the financing, to be calculated as follows:

- The ***carbon reduction*** will be computed as an ex-ante yearly fixed amount, based on the actual annual emission factor of the replaced asset: tonCO2e x annual generation (MWh) displaced by the clean technology project
- A ***carbon price*** of an amount in USD/tonCO_2e will act as a floor price. In case a carbon market is established during the project cycle, the upside in the price will be shared with the sponsor in a proportion to be determined.
- A ***benefit period*** equal to the remaining useful lifetime of the replaced asset.
- The ***maximum mitigation outcome*** will be calculated as the carbon reduction times the carbon price times the benefit period.

73. The ***actual mitigation outcome*** will be the benefit obtained from the subsidized interest rate in the ACT tranche of the financing against a market benchmark interest rate.

74. **Fund requirement for the Private Sector Window.** Based on the methodology defined above and using basic assumptions for the key parameters of the facility a tentative sizing of a private sector window for the CIF's Coal Transition Facility can be estimated:

- Emission factor of the replaced asset: 1ton CO2e / MWh
- Capacity factor of the replaced asset: 50% / 4,380 equivalent hours
- Carbon price: The carbon price could be in a range of US$[1.0 – 10.0] per tonCO2

9 The clean technology project may ideally be able to provide similar features in terms of flexibility that those provided by the Replaced Asset

10 Based on a pilot CTF-IDB project in Chile.

- Benefit period: [5.0 – 10.0] years
- Maximum mitigation outcome per MWh: [1.0 – 10.0] /tonCO2 x 1 tonCO2 [5.0 – 10.0] years = US$ 5.0 – 100.0
- Clean technology project capacity factor: The assumed clean technology project that will substitute the replaced asset will have a capacity factor of between 30 and 50%
- CIF Financing terms: The CIF facility would provide financing at a subsidized interest rate with a floor price of 1%, compared to a market interest rate estimated at between 2.0 and 10.0% for this type of financings and a weighted average life (WAL) of 10.0 years.

75. Assuming 5 years for the benefit period and a 40% capacity factor for the clean technology project the acceleration of the phase-out of 10,000 MW of coal-fired power plants (equivalent to financing 12,500 MW of clean technology projects) would require an amount of CIF resources in the range of US$ 1 billion for carbon floor prices around US$ 3 per ton of CO2e and interest rate rebates around 4 to 6%. See table below for an approximation of CIF financing required in US$ million depending on the carbon price floor and the interest rate reduction.

USD Million		**Carbon price floor (USD / ton CO2e)**									
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Interest rate reduction	**1%**	2,093	4,186	6,280	8,373	10,466	12,559	14,653	16,746	18,839	20,932
	2%	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000
	3%	637	1,274	1,910	2,547	3,184	3,821	4,457	5,094	5,731	6,368
	4%	456	912	1,368	1,824	2,280	2,736	3,192	3,648	4,104	4,560
	5%	348	696	1,045	1,393	1,741	2,089	2,438	2,786	3,134	3,482
	6%	277	554	831	1,108	1,385	1,662	1,938	2,215	2,492	2,769

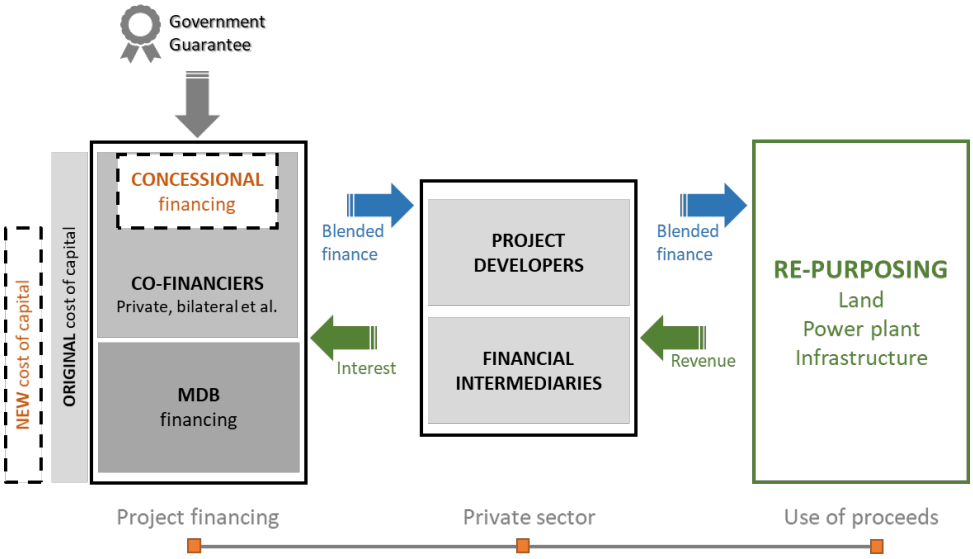
Fund deployment

Example 3: 'Project finance' model

76. Independent evaluations have shown that concessional financing from CIF has been successful in mitigating risks (such as those in geothermal) and lowering the cost of capital (e.g. in concentrated solar power, or rooftop solar). Both these outcomes help mitigate real and perceived risks and change the economics of a project favorably, thereby making the proposition attractive for the

private sector. Increased private sector participation, backed by the right enabling environment, results in wider deployment of clean technologies.

77. Concessional finance for more downstream activities, particularly for the repurposing of the decommissioned infrastructure, can facilitate private sector participation.



78. The graphic above shows how such a model that has been successfully deployed traditionally through the CIF can be used in this context to address transition goals. In this case, the concessional resources from CIF can be used in a targeted manner to bring the costs of financing down or mitigate real and perceived risks, make the project financially viable and facilitate private sector participation.

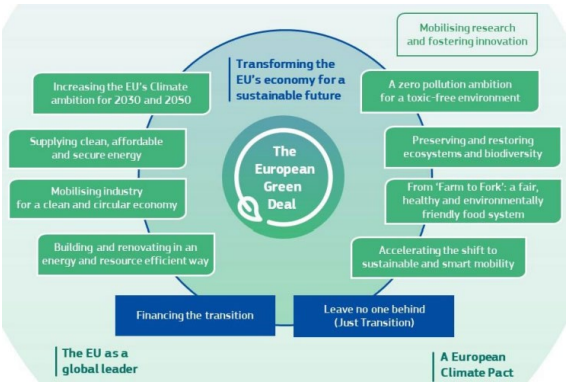
15. ANNEX 3: SIMILAR INITIATIVES

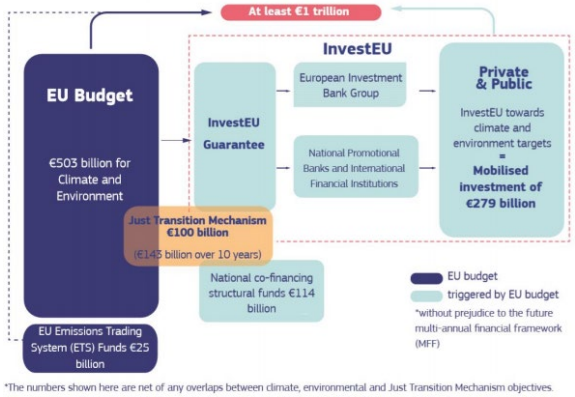
79. There are only a limited number of examples of platforms that strive to offer a similar scale and scope of solutions, two of which are quite recent- the *EU Just Transition Mechanism* and *Germany's coal phase-out plan*. These cases, while still focused on a developed country context, have been used as reference cases and adapted to a developing country context where such support is envisioned.

EUROPEAN UNION

80. The Just Transition Mechanism is a key component of the **European Union's** ambitious *Green Deal,* which aims to mobilize over USD 1 trillion in green investments to realize the bloc's goal of becoming the world's first climate-neutral region by 2050.

EU Green Deal *$1+ trillion investment goal (2021-30)*





81. The Mechanism is designed to address the economic and social costs of the climate transition in the most vulnerable coal and carbon-intensive regions. It includes the following pillars of financing:

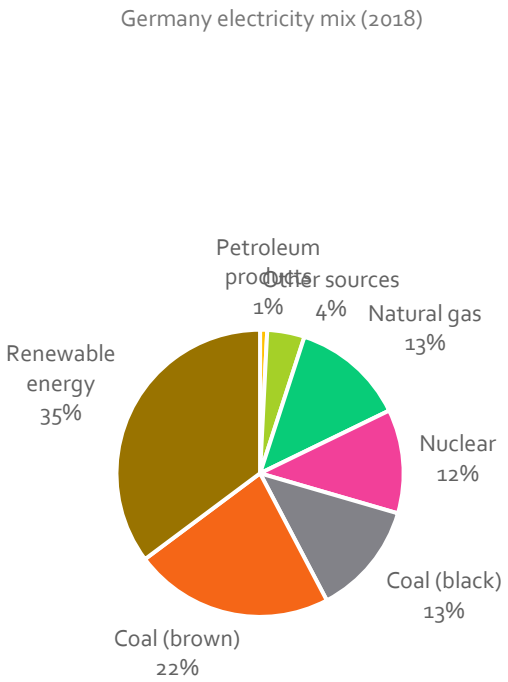
Key pillars for support (2021-27)	**Amount**
Just Transition Fund Grants, for example to support workers to develop skills and competences for the job market of the future and SMEs, new economic opportunities to create jobs, investments in clean energy transition like those in energy efficiency.	USD 20B*
Dedicated just transition scheme under InvestEU to attract private investments and new sources of economic growth including projects for decarbonization, economic diversification, energy, transport and social infrastructure.	USD 50+B
EIB's Public sector loan facility Concessional loan to public sector for energy and transport infrastructure, district heating networks, renovation or insulation of buildings etc.	USD 28-33B
Total	USD 100B+
Technical assistance to support stakeholder engagement, regulatory support, bilateral and multilateral exchanges of experience on lessons learnt and best practices across all affected sectors, among other activities.	

**Excludes mobilization*

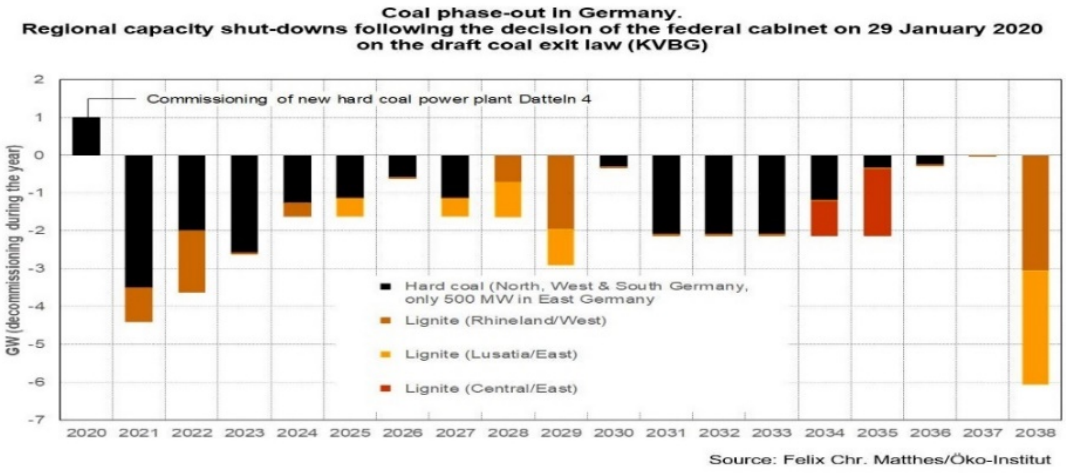
GERMANY

82. Germany is one of the world's largest producers of lignite (the dirtiest grade of coal), with over one-third of its electricity being generated from coal, even though the share of renewable energy has doubled in the country over the past decade.

83. Recognizing the importance of transitioning away to cleaner sources of energy, the government recently approved a comprehensive coal phase-out plan after a long process of consultation involving key stakeholders. Under the plan, the government has committed to kick-start the phasing out process starting in 2020 with the goal of a complete phase-out by 2038 at latest, and almost doubling the share of renewables in the energy mix to 65% by then.



84. A dedicated USD 45 billion fund for *new infrastructure projects* in the coal-dominated regions and *retraining* of affected workers forms the centerpiece of this plan, with roughly 10 per cent of funds seeking to support and compensate affected mines and utilities. Around two thirds of the funds are expected to go to **federal support measures** (such as expansion of research and development program, expansion of transport infrastructure, new institutional arrangements to ensure efficient coordination) with the remaining as **economic stimulus** to lignite mining regions (such as for business-related infrastructure, improvement of public transport, broadband and mobility infrastructure, environmental protection and landscape management).



85. According to the plan, the coal capacity reductions will be determined by auctions that will compensate plant operators for the capacity taken off in a decreasing order of remuneration. For example, a September 2020 auction for a 4 GW capacity phase-out will carry a maximum remuneration 165,000 Euros/MW, while one slated for 2027 will carry 89,000 Euros/MW.