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**Economic Commission for Europe**

Committee on Environmental Policy

**Twenty-first session**

Geneva, 27–30 October 2015

Item 5 (b) of the provisional agenda

**The Eighth Environment for Europe Ministerial Conference:
greening the economy**

 Draft thematic document for the Eighth Environment for Europe Ministerial Conference: greening the economy in the pan-European region

 Note by the Chair of the Committee with support from the secretariat and the United Nations Environment Programme

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| *Summary* |
|  At its twentieth session (Geneva, 28–31 October 2014), the Economic Commission for Europe (ECE) Committee on Environmental Policy (CEP) mandated its Bureau, with support from the ECE secretariat and in cooperation with relevant stakeholders, to proceed with the preparation of the Eighth Environment for Europe (EfE) Ministerial Conference (Batumi, Georgia, 8–10 June 2016), including the drawing up of the first draft of the background thematic document on greening the economy in the pan-European region, based on the questions for discussion agreed by the CEP Bureau (ECE/CEP/2014/2, paras. 84 (a) and 98 (gg) (xi) a). The thematic document aims to facilitate the ministerial discussion under the theme of greening the economy in the pan-European region by providing background information to support delegations in preparing for the Conference. It is expected that concrete national perspectives under each of the identified questions will be brought up during the ministers’ interventions and discussion. The document was prepared by the Chair of CEP, with support from the ECE secretariat and the United Nations Environment Programme (UNEP) and in cooperation with partner organizations listed in the introduction.  CEP will be invited to consider the draft with a view to provide guidance to the ECE and UNEP secretariats and partners in finalizing the document for submission to the Batumi EfE Ministerial Conference. |

Contents

 *Page*

 Introduction 3

 I. Challenges and opportunities 4

 II. Best paths to sustainability 9

 III. Green incentives 15

 IV. Cooperation 21

 V. Conclusions and the way forward 23

 **Figures**

 1. Loans originated by commercial banks for capital repairs and energy-efficient modernization
of apartment buildings in Estonia, backed by the surety issued by KredEx 6

 2. Quality of urban public transport versus demand in selected ECE capitals 8

 3. Trends in selected forest management characteristics, compared with the situation in 2000 10

 4. Nexus components 12

 **Boxes**

 1. Benefits of sustainable public procurement 16

 2. Reforming environmentally related economic instruments in Eastern Europe, the Caucasus
and Central Asia 18

 3. Enabling conditions for innovative start-ups: the case of Italy 20

 Introduction

1. Greening the economy — understood as an approach to foster a healthy economy while ensuring environmental sustainability and social equity — is considered to be a promising avenue towards sustainable development. For this reason, the United Nations and its Member States are working towards embracing green economy approaches, including within the post-2015 development agenda and its Sustainable Development Goals (SDGs).

2. In the pan-European region,[[1]](#footnote-2) environment ministers agreed at the 2011 Environment for Europe (EfE) Conference in Astana to take the lead in the transition to a green economy. They stressed the need to strengthen efforts to decouple economic growth from environmental degradation by stimulating green investments and promoting sustainable consumption and production, energy and resource efficiency and innovation. They also emphasized the importance of the development of human, institutional and economic capacities, including through research, education and training in support of greening the economies.[[2]](#footnote-3)

3. The Eighth EfE Ministerial Conference (Batumi, Georgia, 8–10 June 2016) will work on furthering the green economy transition in the region in response to commitments made at the previous Conference. Whereas, in Astana, the discussion on green economy focused mostly on why this process should be started, in Batumi the discussion will focus on how. The intention is to support ministries of environment to initiate and sustain discussions on the green economy in their national Governments and other relevant forums, and to help move the green economy agenda forward.

4. There is no one-size-fits-all approach for transitioning to a green economy, as different countries encounter different challenges and opportunities. Countries may therefore be interested in different approaches, tools and actions, whether economy-wide or sectoral, for a green economy transition. At the same time, cooperation and the exchange of good practices and lessons learned are important, including with subnational and local authorities, business and civil society, for efficiently and effectively greening the economy.

5. The present document is based on the four clusters of questions for the ministerial discussion prepared by the Bureau of the Economic Commission for Europe (ECE) Committee on Environmental Policy (CEP).[[3]](#footnote-4) The document was prepared by the CEP Chair with input and support from the ECE secretariat and the United Nations Environment Programme (UNEP), and in consultation with partner organizations, including the European Environment Agency (EEA), the International Labour Organization (ILO), the Organization for Economic Cooperation and Development (OECD), the United Nations Development Programme (UNDP) and the World Health Organization Regional Office for Europe (WHO/Europe).

6. The document includes comments made by the CEP Bureau and is being submitted to CEP for further commenting. A revised version, taking into account any comments received at the twenty-first session, will be updated and resubmitted to CEP for final comments at its special session in February 2016. The finalized document will then be submitted to the Batumi EfE Ministerial Conference to support the discussion by ministers on greening the economy in the pan-European region.

7. The document builds on and is complementary to other background documents related to greening the economy produced thus far under the EfE process, as follows:

 (a) Greening the economy: mainstreaming the environment into economic development (ECE/ASTANA.CONF/2011/4);[[4]](#footnote-5)

 (b) Greening the economy in the pan-European region: progress and future prospects (ECE/CEP/2013/10);[[5]](#footnote-6)

 (c) Greening the economy in the pan-European region: progress, priorities, modalities and options (ECE/CEP/2014/5).[[6]](#footnote-7)

 I. Challenges and opportunities

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| **Questions for discussion**: *what are the pressing challenges to greening the economy in your country? What positive effects on, e.g., employment, human well-being, prosperity and natural capital are evident after introducing green economy policies? Have trade-offs been taken into account in policymaking — e.g., in terms of the impact on employment, social equity and private investment?* |
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8. The transition to a green economy is generally considered as a promising avenue, among others, towards achieving sustainable development; nonetheless, there are some groups that need to be further convinced of its merits. One reason for this could be that, in spite of the many benefits resulting from any transformative event, there are short- and medium-term changes that may negatively impact individuals or groups of individuals. Certain enterprises and industries, in particular those adapted to an unsustainable or “brown” economy, may lose their market share if they cannot react quickly to the changes, and thus lay-offs may occur. Other enterprises may be inclined to modify their business portfolio, which would require different skill sets from their staff. Therefore, owners, managers and in particular employees of these enterprises fear that the green economy transition could result in job and income loss and affect their livelihoods. Others may fear that the consumption of some goods and services could become more expensive and that they would not be able to maintain or achieve the standard of living they could aspire to under conventional economic conditions.

9. The transition to a green economy therefore requires the implementation of adequate policies addressing those who may be negatively affected by this transition. With the understanding of the magnitude of the transformation (e.g., with the help of macroeconomic models the potential number of job losses in declining sectors and the number of jobs that will be created in growing sectors can be quantified), and based on empirical data, effective policies can be designed for economic diversification, building new skill sets and the provision of social support to those who would lose their jobs and income. The transition also has to be accompanied by information campaigns on the benefits of the green economy transition to human well-being, especially in the long term, and debunk the false assumption that there will be a general price increase.

10. The design of the policy response is not a trivial undertaking. In a world of complex intersectoral and global connections it may be difficult to assess the impact of a policy across various areas and time scales accurately. However, sectoral models allow for the testing of policy scenarios to quantify their potential impact. Citizens, especially from countries relying on a brown economy, may fear the transition. That fear may be particularly acute if comprehensive strategies addressing consequences across economic sectors or on trade and social elements, including compensation mechanisms, are not available or are not broadly communicated.

11. So far, only a few countries in the region have set up sustainable development or green economy strategies containing policy packages with concrete green economy goals or targets. Even fewer countries have set up intersectoral bodies for oversight and coordination of the possible green economy transition. At the same time, without governmental or institutional collective action and enhanced cooperation and vision, it will be difficult to manage the change. Institutional inertia and the practices of working in silos around economic, social and environmental policy actions need to be overcome for the transition to occur.

12. What may look like the inaction of Governments with regard to the transition to green economy may be explained by the pressure on Governments to take ad hoc measures to combat economic stagnation and high unemployment in the short term. At the same time, the limited number of proven successes in implementing green economy strategies or policy packages has not stimulated Governments to go beyond the actions suggested in conventional economic growth models, even though this may hamper economic development and growth opportunities in the longer term.

13. The transition also requires the mobilization of capital to fund it. In times of slow economic development or economic downturn, State budgets have rather limited capacity to free resources for stimulating the transition, including for leveraging private investment. The private sector is usually waiting for signs of economic recovery or Government action before starting to invest.

14. The private sector is interested in stable and predictable conditions and policy frameworks as a reliable basis for capital investment, especially into new green sectors that would pay back in the longer term. These conditions can be created through the development and implementation of comprehensive and coherent long-term transition strategies and plans by Governments, which are generally lacking at present.

15. The private sector may be refraining from investment in green sectors due to workforce capacity gaps. The green sectors and the jobs emerging from them require particular skills and knowledge, which may be inexistent or limited in current labour markets. In that context, feasibility studies carried out by private businesses may dissuade them from investing in green sectors.

16. Despite these common challenges, there are examples showing the positive effects of implementing green economy policies, in particular sectoral ones. Many of these successes were possible due to policy packages that stimulated private investment. Further information on the policy packages and their elements that bring positive effects is provided in the following sections.

17. A well-known example of an effective green economy policy package is that of the retrofitting of building stock (e.g., in many cities especially, but not only, in the European Union (EU)). Adequate policy action has stimulated building owners (e.g., see figure 1) to invest on a large scale in improving the energy performance of buildings — of both individual houses and apartment blocks — by improving the insulation of walls, installing better windows or improving heating systems. This policy action has had various positive effects, such as job creation in the construction sector (i.e., construction works, construction material production and distribution). It has also helped to reduce energy loss from buildings, which in turn has contributed to decreasing heating bills for households. Further, such policies have contributed to curbing emissions of traditional air pollutants and greenhouse gases from collective or individual heating, which contributes to improving ambient air quality and mitigating climate change. Those who could suffer losses from this policy include energy and heating fuel distributors — a rather small group.

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| Figure 1**Loans originated by commercial banks for capital repairs and energy-efficient modernization of apartment buildings in Estonia, backed by the surety issued by KredEx**[[7]](#footnote-8) |
|  *Source*: [www.kredex.ee](http://www.kredex.ee) Estonia. |

18. Another good example are policy packages aimed at promoting organic farming (e.g., in the European Union, the Republic of Moldova, Switzerland and Ukraine). Such policies stimulate farmers to convert to organic farming practices (e.g., adopting crop rotation and using organic fertilizers and pest control) and eliminate synthetic inputs (i.e., fertilizers and pesticides). In the EU, for example, every year around 500.000 hectares of land are converted to organic agriculture and around 20,000 hectares of land are converted in Ukraine. The positive effects of these policies range from the development of new agribusiness opportunities, increased export and higher farmer incomes (due to a higher price premium), as well as a revitalization of the countryside and restoration of ecosystem functionality. Those who may be impacted negatively include the producers of synthetic fertilizers and pesticides, who may require assistance in reorienting their businesses.

19. Positive effects are also observed in applying policy packages aimed at the stimulation of the forest sector to supply products such as timber, biomass and non-wood forest products and services — e.g., the protection of land and housing from natural disasters such as flooding — to economic markets based on the effective combination of economic and environmental objectives of forest management (e.g., in Poland, Spain and the Alpine countries). The positive effects include wide-ranging job creation in the forest sector for the rural population. At the same time, the introduction of payments for forest services, such as the provision of drinking water purified in a natural and sustainable way by forests stands, could be opposed by mineral water producers that are currently benefitting from this service for free.

20. The implementation of a policy package to promote urban and suburban public transport in combination with walking and cycling also offers positive effects. Such policies provide jobs, and the resultant decrease in the use of private vehicles in urban transport helps to improve the ambient air quality and road safety. They can also ensure access to mobility for those who do not own or drive a car, and help limit economic losses associated with traffic congestion and the health costs associated with traffic accidents and diseases caused by air pollution from cars. Further, such policies have a positive impact on people’s health through promoting physical activity. Nevertheless, the implementation of this type of policy package is rather challenging. To attract passengers, urban public transport needs to offer a high quality service (see figure 2), which in turn requires a reliable and resilient infrastructure and comfortable rolling stock. This cannot be achieved without the necessary capital investment at the city level (many pan-European cities have invested in improving public transport infrastructure and rolling stock). Car manufacturers and their suppliers could incur losses as a result of such a policy package if sales of new cars decline.[[8]](#footnote-9)

21. A policy package promoting waste recovery and recycling is another good means of achieving positive effects from green economy approaches. The waste recovery and recycling sector can create economic income and jobs. For example, according to EEA the employment in waste management and recycling of materials grew annually between 2000 and 2008 by 7.14 and 10.57 per cent, respectively, in the EU countries. The recycling jobs are at higher income levels than the jobs in waste landfilling or incineration. At the same time, the recovered or recycled material could re-enter the production processes, bringing significant economic and environmental benefits. The mining sector could suffer losses, however, if income drops with decreasing demand for mined minerals.[[9]](#footnote-10)

22. As the examples show, the green economy can be about quick economic, social and environmental “wins”, not only in the medium to long term. This is also true for such an important factor as employment, for both urban and rural populations. There is, therefore, evidence that it is worth investing in the green economy transition and fully seizing the opportunities and benefits it brings: economies that are highly resource productive and resilient to shocks, an improvement in the quality of life of the population and the identification of new sources for economic development.

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| Figure 2**Quality of urban public transport versus demand in selected ECE capitals** |
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|  *Source*: ECE, based on data collected in 2011. |

23. The green economy is about improving the efficiency of production inputs — in particular energy, resource and material efficiency — across various sectors. With the increasing efficiency of production, i.e., producing the same outputs with fewer units of inputs, productivity would increase. In the green economy, these productivity gains can be achieved by investing into sectoral solutions and, more importantly, by benefiting from intersectoral synergies.

24. The green economy is also about maintaining the natural asset base for economic development. It incentivizes the search for and use of substitutes to resources and ecosystem services that are increasingly being depleted or degraded. With appropriate investments into research, development and innovation, the green economy would bring diversification of economic activities and economic resilience as a response to the growing uncertainty about the future drivers for development. At the same time, healthy ecosystems contribute to quality-of-life improvements, while reduced environmental stresses decrease human health risks.

25. Finally, the green economy is about benefiting from marketed solutions as a source for further opportunities to economic development or growth and job creation. This can apply to technology and innovation, but also to seizing new opportunities in the area of marketing environmental goods and services, using green financial products and markets, and providing green skills and training.

 II. Best paths to sustainability

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| **Questions for discussion**: *what approaches have proven most useful to promote a more efficient use of natural resources and to reduce pressures on them (e.g., circular economy, green innovation and initiatives in the fields of energy, building, transport infrastructure, water, fiscal reforms, standards and labelling)? What initiatives are working successfully or are planned to be introduced in your country to address challenges and major obstacles, including to sustainable consumption and production patterns?* |
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26. It is widely recognized that natural resources are limited and ecosystems and their services are being degraded, requiring new approaches in order to satisfy the needs of a growing population and foster prosperity in the region in a sustainable manner.

27. To date, a number of approaches, programmes and initiatives have been developed in the ECE region and globally, including the UNEP 10-year framework of programmes on sustainable consumption and production, to promote a more efficient use of natural resources and thus lessen the burden on ecosystems, their services and the natural resource base of economic and social development. These need to be supported by fiscal, regulatory and information-based instruments, as described in the next chapter, to stimulate and incentivize the behavioural change needed for more conscious and sustainable consumption and production (SCP) patterns.

28. Relative decoupling of economic development from environmental degradation is occurring in the region (i.e., resource impacts have declined relative to gross domestic product (GDP)), mitigating risks for human well-being and the environment. However, strengthened and continuous efforts are still required in order to achieve absolute decoupling, where resource efficiencies increase at least as fast as economic output does and resource impacts decrease in absolute terms.

29. Applying sustainable natural resource or ecosystem management approaches, reducing the environmental impacts of the economic sectors, nexus analysis, spatial city planning and the circular economy approach are ways to curb pressures on finite natural resources. Long-term changes in societal behaviours can be achieved through education for sustainable development (ESD). The application of public spending programmes for science and research, access to good practices and knowledge in reducing environmental pressures and the availability of monitoring frameworks to assess the successes or failures of policies aimed at achieving sustainability are also important to that end.

30. A key element to the effective introduction of the above approaches and programmes is through a meaningful engagement of civil society and the private sector, both through enabling their access to information and by their participation in the decision-making.

 Sustainable natural resource or ecosystem management

31. Sustainable resource or ecosystem management through a set of defined principles helps to manage resource or ecosystem use so that the most effective combination of environmental, economic and social objectives can be achieved and, at the same time, their functions are secured in the long term. The best known and widely applied among these approaches are sustainable water management and sustainable forest management.

32. Sustainable water management helps to match supply and demand for water and to allocate water where it creates more benefits, while making sure that water resources are not depleted or their quality degraded. Interlinkages between water and other sectors in which water is used are established and different water allocations scenarios are examined. A good international practice supported by an international agreement[[10]](#footnote-11) suggests that sustainable water management needs to be implemented at the basin level, whether or not it is transboundary.

33. Sustainable forest management helps to balance the demand for forest products and services and the need to safeguard and enhance forests ecosystems, so that forests can continuously deliver all their functions in the future, while enabling long-term economic viability and the competitiveness of forestry and forest-based industries (see figure 3).

34. These management frameworks need to be supported by a variety of instruments enabling their implementation and behavioural change. A good regulatory basis is critical. Also, application of economic instruments plays an important role, e.g., for water by pricing it at appropriate levels differentiated by uses, or for forests by putting in place payments for ecosystem services schemes.

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| Figure 3**Trends in selected forest management characteristics, compared with the situation in 2000 (%)** |
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| *Source*: *Forests in the ECE Region: Trends and Challenges in Achieving the Global Objectives on Forests*, United Nations publication, Sales No. E.15.II.E.6. Available from www.unece.org/forests/forests-in-the-ece-region-2015. |

 Sustainable sectoral approaches

35. Environmental sustainability should be at the centre of the development of each economic sector. This means improving the quality of life of the population and ensuring economic progress and security while reducing the ecological footprint of that sector.

36. In the energy sector, the development of energy generation from renewable sources, the growth of distributed generation, the creation of a network of small-scale energy systems and the implementation of off-grid solutions based on renewable sources and energy storage or smart grids, are all indicators of an energy revolution that helps to build a sustainable energy system (see figure x).[[11]](#footnote-12) The move to energy generation from renewable sources helps decrease the use of mineral resources and so the pressures on them. All the actions aimed at increasing energy efficiency from source to use — during production, transmission and distribution — allow saving resources that otherwise would need to be used for compensating the energy loss.

37. In the agricultural sector, replacing intensive and unsustainable farming practices with traditional, extensive and sustainable farming techniques can reduce chemical, water and energy consumption, avoid surface water and groundwater pollution, as well as preserve important soil nutrients. There is evidence that low- or no-cost changes in farming techniques can reduce pressures on ecosystems with the added benefit of conservation of high value farmland and agricultural biodiversity for future generations.

38. In the construction and manufacturing sectors, through the application of environmentally sustainable approaches, the manufacturing or construction processes and the manufactured goods and constructed buildings are becoming greener. Both material and energy productivity have improved over recent years for goods like houses, cars and various appliances, which has helped to reduce pressures on the environment.

39. In the transport sector, the promotion of intermodal transport solutions — enabling transfers between locations by optimally combining various modes of transport that are the most energy efficient and least polluting for the various legs of those transfers — can help cut energy use, and so polluting emissions, and ultimately decrease the pressure on resources and ecosystems while improving human well-being in the form of health benefits.

40. The results achieved through sustainable sectoral approaches could be further enhanced. For the energy sector, a better integration of national markets with common rules of operation would create an opportunity for a more cost-effective penetration of lower-carbon technologies and improve the resilience of the energy system. Similarly, for the transport sector, integration of national transport markets by introducing common rules of operation would incentivize using more efficient modes of transport — for example, rail in international transport. This would enable investment in the infrastructure required. In general, clear and common rules of operation, also at national level, could attract private investments into both the energy and transport sectors.

41. In the construction and manufacturing sectors, further effort is needed to green them, as the efficiency gains have been offset by the increased demand. There is a need to green the global supply chains for the sectors and find and apply innovative solutions that will help achieve absolute decoupling.

 Nexus approach

42. At the heart of a nexus approach is the integration across sectors and scales in management and governance in order to achieve synergies and minimize trade-offs. This approach emphasizes the interrelatedness of and interdependencies between resources like water, energy, land (for agricultural production in particular) and ecosystem services, as well as fluxes across spatial scales and between compartments. Instead of just managing individual components in isolation, the functioning, productivity and management of a complex interrelated sectoral system and framework is assessed in order to identify best solutions reconciling the needs of the different sectors.

43. The nexus approach thus goes beyond the management of one system or framework and examines linkages that are not apparent for that system or framework — e.g., the impacts of an energy or other sectoral policy on the status or use of water resources, which would not be covered by the sustainable water management approach only.

44. An example of a nexus is that of water-food-energy-ecosystems (see figure 5). Such a nexus can be particularly problematic and prone to frictions, or even conflict, in transboundary basins, and therefore merits an assessment looking at the dependencies of the riparian countries on the basin, but also developments like national policies and regional commitments, to understand the most pressing challenges for that basin across the water, energy and food sectors, as well as for the basin ecosystems. These pressing challenges can be then prioritized, ideally engaging the administrations and other organizations concerned, and a menu of possible actions to address the challenges can be proposed to inform various actors. A step-by-step methodology for carrying out a participatory assessment of the water-food-energy-ecosystems nexus in transboundary basins has been developed under the ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes and is available for wider application.[[12]](#footnote-13)

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| Figure 4**Nexus components** |
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|  *Source*: ECE. |

45. The nexus analysis is also a challenging undertaking, because there are frequently gaps in data and information necessary for the analysis, or the access to such data and analysis is limited. A successful nexus analysis — but also the management response — benefits from good cross-sectoral dialogue and communication, also to promote an understanding of the needs and risks related to other sectors. Frameworks for cooperation such as agreements and arrangements with a multisectoral scope facilitate putting into practice an intersectoral (or a nexus) approach. Such practical applications can also be strengthened through regulations requiring the assessment of the impact of plans and policies, such as strategic environmental assessments.

 Spatial/city planning

46. The pressure on resources could be curbed if urban infrastructures, on which production and consumption systems are dependent, are configured appropriately to deploy, use and reuse resources in an efficient way. Today, however, the urban infrastructure in many cities is inadequate (developing cities) or inappropriately configured (developed cites) from a sustainable resource use perspective. This has often been caused by rapid urban development in many, especially developing, countries and the resultant urban sprawl, with the unplanned extension of the cities and their infrastructure.

47. Today, compact and structured urban growth based on integrated and strategic planning should be at the heart of city development. Such planning should promote, among others, compact city development, mixed use of land, as well as an increase in green and public spaces.

48. A good regulatory system and governance adapted to the local context are critical in pursuing effective city planning in support of the efficient use of resources. Cooperation and partnerships between municipalities and national Governments in urban planning and management should be strengthened. Also, urban planners and local decision makers need to be equipped with adequate knowledge for effective city planning. Again, regulations requiring assessments of impacts from plans and policies, such as strategic environmental assessment, can be very useful in this context.

 Circular economy

49. At the centre of the circular economy approach, which addresses all stages of the flow of materials, is the improvement of product design in such a way that the materials used for products can be reused again with minimal energy needed for reprocessing. Waste is also reduced with this approach, which promotes reusing, repairing, refurbishing and recycling existing materials and products.

50. In the automobile industry, vehicles are designed in such a way that 75 per cent of the materials used in their production can be recycled today. The end-of-life vehicles are shredded and metals and polymers are recovered. In this way not only are recovered metals used for new products, but energy is also saved. According to the Steel Recycling Institute, the United States steel industry alone, by recycling steel, annually saves enough energy to power about 18 million households for a year.

51. The opportunities that a circular economy approach brings are, however, still untapped. In many countries the recovery of minerals from products is rather low (see figure xx).[[13]](#footnote-14) Recovery of rare metals, despite their high economic and environmental value, is very low.

52. The circular economy approach, in order to achieve its objectives, needs to be better supported by various legal and policy instruments to incentivize investment in modular product design, material recovery and reprocessing. Among such instruments are the setting of appropriate targets for the reduction of waste streams and the amount of waste to be deposited to landfills, appropriate laws regulating recycling businesses, laws defining extended producer responsibility for waste generation from their products, and pricing instruments to minimize waste disposal and increase market competitiveness of eco-design products.

 Education for sustainable development

53. Actions aimed at achieving sustainability need to be targeted not just towards the production side, but also towards the consumption side. It is therefore critical to educate every individual so that they can acquire not only the knowledge and skills related to sustainable development, but also, as consumers of goods and services, the attitudes and values necessary to shape a sustainable future.

54. ESD aims to mainstream sustainable development issues, including sustainable consumption habits, into teaching and learning. It also promotes competencies like critical thinking, imagining future scenarios and taking adequate decisions in a collaborative way.

55. ESD has been introduced into the teaching curricula in many countries. Yet the success of teaching sustainable development depends on the actual teachers’ ability to integrate this concept in the subjects they teach. This requires teacher training and the availability of teaching aid materials, which are often insufficient or lacking.

 Public spending programmes for science and research

56. The pressure on resources could be reduced by finding substitutes for them or by looking for technologies that would provide goods and services that would rely on abundant resources to support human well-being while avoiding the creation of pollution or waste.

57. Mega research projects, such as the International Thermonuclear Experimental Reactor (ITER) project, which attempts to prove the viability of fusion as an energy source, could be a remarkable leap forward in addressing the existing resource challenges. As there are no guarantees that these projects will end up being successful, and they are costly and of long duration, they depend on available public funding. Often, like in the case of the ITER project, the costs can be so high that it requires a number of countries to join forces.

58. In spite of the high uncertainty and potential risks, these types of large breakthrough projects should be funded by public financing for science and research, with countries joining forces to meet the costs.

 Access to good practices and green knowledge and monitoring frameworks

59. The accessibility of policymakers and practitioners to cutting-edge knowledge and good practice, as well as a good understanding of the progress achieved, is critical to pursuing the transition to a green economy and with it curbing the pressure on natural resources and ecosystems.

60. The Green Growth Knowledge Platform (GGKP)[[14]](#footnote-15) has been delivering and sharing knowledge and good practice since 2012. The knowledge research and responses provided in 2015 focused on the following priority topics: fiscal instruments; metrics and indicators; technology and innovation; and trade and competitiveness. For countries to benefit from the GGKP it is important that they actively use the knowledge developed and provide feedback.

61. The tracking of progress in the green economy transition could be carried out against a set of indicators and targets that represent the outcomes that the transition is expected to achieve. It could therefore be linked with the indicators and targets of the SDGs. The Shared Environmental Information System (SEIS), which makes available a common knowledge base with data and information for the whole region, could be used to produce the indicators. To do so, countries will need to further develop their national SEIS, as agreed for the pan-European region.

 III. Green incentives

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| **Questions for discussion**: *what incentives concerning sustainable public procurement, environmental taxation and the removal of environmentally harmful subsidies, including fossil fuel subsidies, have been introduced, and what else can be done? What do you do to encourage green investment, including private and foreign direct investment and technology transfer in different sectors?* |
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62. In the region increasing attention is being given to approaches and instruments that can incentivize the public and private sector to innovate and invest in greening production processes and to offer green products and services. Sustainable public procurement, market-based instruments and regulatory measures, but also information-based tools, like voluntary standards and labelling schemes, are among these. Policy and fiscal measures in support of innovative enterprises (“start-ups”) are also important drivers of private investments in green technologies and can facilitate the flow of knowledge and technology transfer between the worlds of academia and research and the business sector, as well as between countries.

 Sustainable public procurement

63. Green and socially responsible purchasing by public authorities — sustainable public procurement — is a powerful tool to influence private companies and incentivize them to organize and focus the production process in ways that contribute to achieving environmental and social targets. This is due to the fact that public authorities in a number of sectors (public transport, construction, education and health) are key consumers. The public authorities of the EU member States, for instance, spend approximately €2 trillion annually, equivalent to some 19 per cent of the GDP of the EU. And in Eastern Europe, in countries like the Republic of Moldova, such expenditures can reach up to 27 per cent of the GDP.

64. In the EU, there is a supportive regional policy and legal framework, with detailed sustainable public procurement criteria and the indicative quantitative target that, by 2010, 50 per cent of all public tendering procedures should be green, where “green” means compliant with endorsed common core EU green procurement criteria for 21 priority products and service categories (e.g. paper, cleaning products and services, textiles, construction, food and catering services, and electricity). National Action Plans addressing green public procurement have been adopted by a majority of the EU countries. Progress has also been made in Belarus, the Republic of Moldova and Ukraine, where action plans have been developed and priority products identified.

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| Box 1:**Benefits of sustainable public procurement**Some examples of the concrete benefits that could be generated by public authorities through sustainable public procurement include: * 3 million tons of CO2 would be saved in the Netherlands alone if all the Dutch public authorities applied the national sustainable public procurement criteria. Public sector energy consumption would be reduced by 10 per cent.
* If all information technology purchases in Europe followed the example of the Copenhagen City Council and the Swedish Administrative Development Agency, energy consumption would be cut by around 30 terawatt hours — roughly equivalent to the amount of energy produced by four nuclear reactors.
* £40.7 million (€47.2 million) could be saved in the United Kingdom of Great Britain and Northern Ireland if the proposed Government buying standards, including green standards, are applied by all central Government departments and executive agencies, according to a cost-benefit analysis which monetized the potential impacts.
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65. However, to exploit the full potential of this policy instrument a number of conditions must be met, including: sufficient political will; behavioural change in purchasing departments (green products are often perceived as costing more); the availability of legal expertise; the availability of practical tools and criteria for products and services; the availability of information on products and services; and cooperation between the relevant authorities.

 Market-based instruments

66. Putting a price on pollution or on the overexploitation of scarce natural resources — through mechanisms such as, e.g.. environmental taxes, pollution charges and environmental damage compensation payments or similar instruments — can also shift the attention of private companies towards more environmentally sound products and services and support investments in green technology. Pricing mechanisms tend to impact the costs of achieving a given objective and provide incentives for further efficiency gains in production processes, product innovation or transfer of technologies. They can also generate revenue to help finance education, health care, infrastructure development or poverty alleviation.

67. In the region, most new efforts on environmental taxes focus on pollution (Georgia, Greece, Romania) and there are also examples of taxes on natural resources (Lithuania). Some countries (the Netherlands, Norway, Sweden) have not only introduced taxes and charges, but are also indexing them annually, so that they stay constant in real terms and retain the same impact on the private sector. There are also examples of levies, such as the climate change levy on energy use established by the United Kingdom, with businesses from certain sectors and/or using certain types of energy receiving discounts. However, research suggests that those businesses that paid the full levies were actually more innovative than those that received discounts, as evidenced –by the higher number of patents registered.[[15]](#footnote-16) . [the message is that those companies exempted partially or fully from the levy had issued less request for patents compared to the other companies, i.e. were “less innovative”]

68. The EU or Swiss emission trading scheme, working on the “cap and trade” principle with the cap reduced over time, is another example of a system designed to curb emissions. The idea of trading was introduced to ensure that emissions could be cut where it costs the least to do so. Kazakhstan has also introduced such an emissions trading scheme.

69. Time-limited subsidies can also be a useful tool for changing price signals. They can be an effective policy option when pricing instruments are too difficult or costly to enforce. They typically lower the upfront capital cost of investment by offering grants, tax credits, or low-interest loans to enterprises. Examples include subsidies for the promotion of clean technology (Italy) or greener agriculture or feed-in tariffs for renewable energy (Switzerland), and sometimes take the form of tax rebates (Greece, for energy efficiency). However, subsidies tend to be accompanied by higher costs and involve complications around targeting and how to find or redirect limited public funds. The demands that they place on governments in terms of administrative capacity and information requirements are considerable. Subsidies can also have far-reaching and unintended consequences, but these are not always easily detected or visible to the public.

70. At the same time, existing subsidies which run counter to the objectives of green growth policies should be eliminated. There is evidence that they can constitute a heavy burden on the budgets of State or local authorities and are at the same time difficult to phase out. Subsidies on fossil fuels, for instance, both encourage pollution and constrain the ability of governments to engage in programmes to boost long-run growth through, for example, improved health and education. Reforming and eventually phasing out environmentally harmful subsidies can be an important part of the transition to greener and more efficient economies. Savings from subsidy reform could offer a budgetary opportunity to boost support to green growth, but this will depend on the local context.

71. Despite the fact that the use of market-based instruments is expanding, including in the region of Eastern Europe, the Caucasus and Central Asia (box 2), they are often used to address selected issues in a specific sector, rather than being applied in a concerted manner across the economy.

72. Furthermore, the issue of competitiveness is central to applying market-based instruments. Without a coordinated approach at the regional (and global) level on the application of these instruments, their impact on the private companies can be different than expected. For example, companies may choose to relocate to countries with no environmental taxation as part of their strategy to reduce costs.

73. In addition, some of the market-based instruments are not yet producing the expected benefits. For instance, the EU emission trading scheme is facing a challenge in the form of a growing surplus of emission allowances, largely because of the economic crisis which has depressed emissions more than anticipated. As a consequence carbon prices are not high enough to send a signal for transformational change. Instead, today’s low prices for carbon are driving investments away from green alternatives, and towards fossil fuel options such as natural gas.

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| Box 2**Reforming environmentally related economic instruments in Eastern Europe, the Caucasus and Central Asia**Over the past 10 years, countries of Eastern Europe, the Caucasus and Central Asia have been making efforts to improve the design and implementation of economic instruments for advancing environmental policies, including pollution and product taxes or charges, non-compliance penalties and environmental damage compensation payments. The instruments’ administrative efficiency (including the collection rates) has substantially improved across the region. The environmental tax rates have increased, the number of pollutants subject to taxation in some countries have been reduced from hundreds to more practical levels (less than twenty), and the use of product taxes and administrative fines for legal entities has expanded. Despite this progress, the design of these instruments, individually and collectively, remains far from optimal. |
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 Regulatory measures

74. In certain cases, well-designed regulation or compliance promotion may be more appropriate and effective to drive the private sector towards greener products and production processes. These include instruments and procedures[[16]](#footnote-17) such as strategic environmental assessment (SEA) of sectoral policies and programmes, environmental impact assessment (EIA) of individual development activities, emission limit values (ELVs), best available technology requirements, zoning and pollutant release and transfer registers (PRTRs).

75. SEA and EIA define objectives and step-by-step procedures that implement a precautionary approach to environmental and social impacts. They set procedures for consultation and communication between sectoral ministries, as well as between subnational and local authorities, business and civil society.

76. EIA provides information, inter alia, on alternatives — including the zero (or “no action”) alternative — to a proposed activity, the likely impacts of the proposed activity and possible mitigation measures to keep adverse environmental impacts of economic activities to a minimum. It also helps to identify gaps in knowledge and uncertainties. The EIA procedure is usually followed up with a post-project analysis that aims at monitoring compliance by the project developers with environmental conditions or mitigation measures, reviews the performance in coping with uncertainties and verifies the past predictions against future similar activities. EIA has been well embedded in the development concept in many countries over the past two decades (see figure xx).[[17]](#footnote-18)

77. SEA identifies the main drivers affecting trends important for green economy considerations, evaluates a wide range of likely impacts and compares pros and cons. It helps to find alternative solutions or options for achieving the planned objectives. The benefits of SEA include improved cost-effectiveness through better and more informed decision-making, leading to wider acceptance of the project by the public and less discussion at the operational level.

78. ELVs are the maximum permissible concentration of emissions of a specified polluting substance with which the industrial operators have to comply if they do not want to face fines or shutdowns. They have proven to be an effective tool in stimulating investment in cleaner technologies. Belgium, for example, set mandatory ELVs for stationary sources of volatile organic compounds and introduced advanced methods of detecting emissions at industrial sites. Switzerland set particulate matter ELVs, which require the use of construction equipment with high-efficiency diesel particulate filters. The ELVs are based on best available techniques (BAT), without prescribing the use of any specific technique or technology.

79. The EU BAT Reference documents (BREFs)[[18]](#footnote-19) (e.g., under the Industrial Emissions Directive)[[19]](#footnote-20) provide information on different industrial and agricultural sectors regarding sector-specific techniques and processes, current emission and consumption levels, techniques to consider in the determination of BAT and emerging techniques. BREFs thus serve as guidance for industry, Governments and the public on achievable emission and consumption levels when using specified techniques.

80. The introduction of stringent ELVs such as, for example, for sulphur dioxide and nitrogen oxides (EU, Japan and the United States of America) has led to a large increase in the number of patents issued on related abatement technologies. Interestingly, the transfer of technologies occurs across countries, although indirectly: earlier patents issued in other countries are cited in the new patent applications. And the implementation of stringent automobile emissions standards (United States) induced domestic firms to increase their patenting activities relative to foreign competitors.

82. PRTRs are free, publicly accessible, online registers providing periodic and reliable data on emissions (releases) and transfers of pollutants, including greenhouse gases (GHGs), heavy metals and toxic chemical compounds. Although they regulate information on pollution, rather than pollution directly, PRTRs exert a significant downward pressure on levels of pollution, as no enterprise would want to be identified as among the biggest polluters. Over recent years, PRTRs have been successfully used for measuring progress in reducing pollution in many countries.

83. In addition, a strong industrial safety regulatory framework is important to ensure that enterprises operating hazardous industrial sites invest in safety. The regulations have to provide zoning requirements for the siting of hazardous installations, and must enable the introduction of a robust system for their operation, which will limit the adverse consequences to health and the environment in the event of an accident. They should also ensure, as much as possible, a prompt normalization of operations after the accident.

84. It should be noted that the regulatory measures mentioned above can only deliver the expected results if enforcement mechanisms are also established to ensure that the measures are fully implemented.

 Information-based measures

85. Voluntary standards and related certification and labelling schemes are powerful instruments for driving the green economy transition because they help consumers to take environmental concerns into account when shopping for food or other consumer products. They define the sustainability of products and the production process, communicate this information and guide purchasing choices of individuals, businesses and public authorities. The number of “green” schemes available has grown exponentially in the last few years and includes over 400 eco-labels alone. Due to this phenomenon, Switzerland, for instance, created a website (www.labelinfo.ch/) where consumers can get information on the different labels available in Switzerland.

86. The schemes can, however, affect competitiveness and constitute barriers to trade, particularly for small and medium producers that may lack the resources required to prove compliance. Therefore, if these schemes are to foster continuous improvement rather than locking in any particular technology, they should leave the approach to innovation to industry rather than to standard-setting agencies (e.g., performance standards) and be used in coordination with other instruments, as part of comprehensive policy packages, and the regulatory process should leave as little room as possible for uncertainty at every stage.

87. Decreasing the ecological footprint over the life cycle of the production process provides opportunities for improved productivity and competitiveness. The Enviroclub Initiative (Canada) is a successful example of training and coaching programmes developed to help small and medium producers increase their competitiveness through enhanced environmental performance. In Europe, several countries have undertaken the initiative to support businesses in the adoption of environmental management systems, such as International Organization for Standardization (ISO) Standard 14000 and the EU Eco‑Management and Audit Scheme (EMAS) (Slovakia).

 Measures to support innovative enterprises that promote green technologies

88. Nowadays, start-ups are revolutionizing the world by introducing critical technological innovation, among others, in clean technologies, energy savings, recycling, waste and water management. And there are several other reasons why they matter to Governments: start-ups can improve the flow of knowledge between universities and research centres and the entrepreneurial fabric (technology transfer); they are key to the job creation process, as it is estimated that currently about 50 per cent of new jobs created in OECD countries come from start-ups; and a healthy start-up community and supportive environment can rebrand countries’ international image and improve their attractiveness for global flows of financial and human capital. In the ECE region, countries like Italy, Estonia and the Netherlands have embarked in successful national reform processes to encourage start-ups and the EU launched the “Start-up Europe” initiative as part of its Digital Agenda and Entrepreneurship 2020 Action Plan.

89. In order to thrive and be successful, start-ups need a supportive environment, providing assistance, funding and mentoring to eager entrepreneurs. This involves putting in place tax incentives, providing for innovative funding and remuneration schemes It also requires the exchange of best practices and cooperation between countries.

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| Box 3**Enabling conditions for innovative start-ups: the case of Italy**In late 2012, Italy launched a thorough reform in support of start-ups, which culminated in the adoption of the Italian Start-up Act, a package of tools affecting all stages of the business life cycle, and creating the enabling conditions for the rapid establishment and scaling-up of start-ups. The Act provides robust financial incentives for start-ups, including: up to 27 per cent reductions on taxes for seed and early-stage investments, amounting to up to €1.8 million; streamlined, free-of-charge access to guarantees of 80 per cent on bank loans amounting to up to €2.5 million euro; exemption on fees; ground-breaking remuneration tools, making it possible to pay workers and consultants through stock options and work-for-equity schemes, which are tax deductible for both fiscal and contributory purposes; and the possibility to use innovative funding instruments, that allow capital to be raised in exchange for shares through equity crowd-funding portals. As a result, today the country counts more than 3,700 highly innovative technology start-ups with about 19,000 partners and employees, and about €150 million have been lent to more than 320 start-ups during the period 2014–2015. |
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 IV. Cooperation

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| **Questions for discussion**: *what steps could be taken to further promote cooperation among countries in the pan-European region to facilitate the transition to a green economy, including in the context of the post-2015 development agenda?* |
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90. Cooperation among countries is crucial for advancing the green economy transition. Certain instruments, in particular market-based instruments, deliver better results if they are implemented in a coordinated manner by countries. Cooperation also allows building on each other’s knowledge, experience and practices in elaborating and implementing strategies, action plans or road maps for the green transition. The sharing of practices and experience is particularly helpful for engaging the private sector and civil society more effectively in this work. International organizations play a central role in facilitating cooperation among countries.

91. Market-based instruments encourage the private sector, through price signals, to move to more socially and environmentally sound production processes and thus to invest in technology transfer or in research and development. If, however, an enterprise has direct competitors operating from countries without or with only weak social or environmental price signals, it may decide to relocate its production activities to keep operational costs low and so stay competitive on price regionally or globally. Coordination among countries and the implementation of similar types of price signals may therefore be important in preventing relocation of industrial operations between countries.

92. There is evidence that, by cooperating and learning from each other, countries have been able to advance faster, which applies also to the green economy transition. Through working together, often facilitated by international organizations, countries have been able to identify and address knowledge gaps in putting in place instruments or approaches to support the green economy transition. The cooperation of countries facilitated under GGKP is a good example.

93. Furthermore, by sharing success stories in putting in place specific instruments or approaches, countries can help each other to be more effective in managing their green economy transition. In particular, countries with limited capacity for managing the change can benefit from such sharing.

94. Clearinghouse mechanisms have sometimes proved useful in supporting the sharing of good practice and success stories. For example, the Aarhus Clearinghouse[[20]](#footnote-21) showcases information on laws and practices relevant to ensuring the meaningful engagement of civil society in environmental decision-making at all levels, and thus implementing Principle 10 of the Rio Declaration on Environment and Development. The Global SCP Clearinghouse under the UNEP 10‑year framework of programmes on SCP will also host a wealth of innovative good practices.[[21]](#footnote-22)

95. A menu of green economy actions developed by ECE and UNEP in cooperation with OECD, EEA and other partners, as part of the strategic framework for greening the economy in the pan-European region (ECE/CEP/2015/L.4), could serve as a green economy clearinghouse, integrated into the GGKP platform. Cooperation with the Partnership for Action on a Green Economy (PAGE) — hosted by UNEP, and bringing together ILO, UNDP UNEP, the United Nations Industrial Development Organization (UNIDO) and the United Nations Institute for Training and Research (UNITAR) — would further strengthen the actions.[[22]](#footnote-23)

96. The strategic framework links possible actions to green economy priorities and focus areas, which are further associated with the relevant SDGs. The use of the action menu linked to the strategic framework can thus help the countries both to manage the transition to green economy and to progress towards the attainment of many SDGs.

97. Cooperation between countries also leads to the development of open access policies for data and information. The development of SEIS –– linking open data and information produced and shared by countries –– would not be possible without the countries needing to work together for reciprocal benefits. In the context of green economy, such access contributes to improving the efficiency of green governance.

98. International organizations support countries in their joint efforts for the green transition in the region through a wide range of regional cooperation activities. These include organizing meetings and workshops to strengthen leadership for green economy, as well as to enable peer learning or to develop and share green economy knowledge or establish SEIS.

99. International organizations also facilitate pilot projects on green economy for the application of appropriate instruments, or for the development and implementation of various national green economy strategies, road maps or action plans. They support joint efforts to introduce measurement approaches, including indicators for measuring the green transition. For example, under the Greening Economies in the Eastern Neighbourhood (EaP GREEN) programme, the EU, ECE, OECD, UNEP and UNIDO are supporting six Eastern European countries’ transition to green economy by assisting their development of strategic plans and policies and the implementation of demonstration activities on resource-efficient and cleaner production, organic agriculture and sustainable public procurement. Other examples of such projects include support from UNDP and OECD to a pilot project on the integration of green growth indicators in Kyrgyzstan; ILO, UNDP, UNEP, UNIDO and UNITAR work with countries under the PAGE project; and the Rovaniemi Action Plan for the Forest Sector in a Green Economy developed by ECE.

100. Cooperation between countries on green economy and the support of international organizations should continue and could be further strengthened for managing the transition effectively. Tools, instruments and other mechanisms made available by them should be actively used in this work to address gaps.

 V. Conclusions and the way forward

101. Countries in the region are undertaking efforts to green their economies. They also face various challenges in pursuing green economy policies. Those challenges may be related, but are not limited, to the adequate application of policy impact analysis, the absence of strategies and stable green development conditions, pressures created by the economic downturn and related difficulties in mobilizing capital, a lack of necessary green skills and knowledge and pressures from interest groups or lobbies. At the same time, there are good examples in the region of the successful implementation of green economy policy packages, in particular sectoral ones, which showcase how countries can green or start to green their economies. Nevertheless, the opportunities that the green economy brings can be further tapped.

102. Countries have developed a number of approaches, programmes and initiatives to foster the more efficient use of natural resources and lessen the burden on ecosystems and the natural asset base. Among them are the circular economy, sustainable ecosystem or natural resource management frameworks, environmentally sustainable sectoral approaches, nexus approaches to resource management, ESD, spatial planning, public spending on science and research, access to good practice and monitoring frameworks. Success in pursuing such programmes and initiatives often depends on the introduction and enforcement of clear rules and regulations, the application of price signals discouraging environmental pollution and resource depletion, transparency, effective engagement of civil society and the private sector, and close cooperation between countries.

103. In the region, increased attention is being given to actions and instruments able to incentivize the private sector to innovate for and invest in greening production processes and to offer green products and services. Sustainable public procurement, market-based instruments and regulatory measures, but also information-based tools, like standards and labelling schemes, are among these. Policy and fiscal measures in support of innovative enterprises (start-ups) are also an important driver of private engagement in the development of green technologies. The effectiveness of these instruments, and the ability to use them effectively, should be further enhanced. Some require better design to fit the market conditions, whereas others need good cooperation and communication between various government institutions. Government employees also need to be trained in the use and enforcement of the instruments.

104. Countries have fostered a good level of cooperation with the support of international organizations. Continuation of this cooperation, and possibly strengthening it with a focus on seizing the opportunities the green economy brings and addressing existing needs gaps taking into account countries’ priorities, can accelerate the transition.

105. The activities undertaken by countries, and the guidance given by international organizations so far, have been compiled into a common action menu under the strategic framework for greening the economy in the pan-European region, and are expected to help accelerate the transition. The strategic framework will equip countries with the available knowledge on actions and instruments that can be used for pursuing specific green economy focus areas according to their priorities and, at the same time, attaining SDGs.

106. With the strategic framework in place, ministers of environment of ECE countries will be able to make the case for a green economy transition within their Governments. In particular, they can refer to and select actions that are well suited to their national circumstances.

1. The pan-European region under the Environment for Europe process covers the full membership of United Nations Economic Commission for Europe (ECE), i.e., the 56 ECE member States. [↑](#footnote-ref-2)
2. Ministerial Declaration “Save water, grow green” (ECE/ASTANA.CONF/2011/2/Add.1), available from www.unece.org/env/efe/astana/welcome. [↑](#footnote-ref-3)
3. In addition, ministers are expected to discuss green agriculture and environmental risk reduction as well as how subnational and local authorities, business and civil society are involved in greening the economy. [↑](#footnote-ref-4)
4. Available from www.unece.org/env/efe/Astana/documents.html. [↑](#footnote-ref-5)
5. Available from [www.unece.org/index.php?id=32257](file:///%5C%5CUNECE-DATA%5CDATA%5CGROUPS%5CEhlm%5CEditorial%5Cin%20preparation%5Cwww.unece.org%5Cindex.php%3Fid%3D32257). [↑](#footnote-ref-6)
6. Available from [www.unece.org/index.php?id=35032](file:///%5C%5CUNECE-DATA%5CDATA%5CGROUPS%5CEhlm%5CEditorial%5Cin%20preparation%5Cwww.unece.org%5Cindex.php%3Fid%3D35032). [↑](#footnote-ref-7)
7. Mention in this document of the names of firms and commercial products does not imply the endorsement of the United Nations. [↑](#footnote-ref-8)
8. To date, behavioural change has not occurred to the extent that would allow car manufacturers to claim the loss of market due to increasing use of public transport in urban areas. At the same time, promotion of intermodal transport solutions — use of cars in combination with public transport as well as walking and cycling for suburban mobility — can accommodate the conflicting interests of various groups. Furthermore, if this is combined with the promotion of fuel-efficient and/or electric cars, replacing energy inefficient cars with efficient ones will create a large number of jobs in car manufacturing. [↑](#footnote-ref-9)
9. Today, the mining industry is affected more by economic downturns and related drop of demand rather than the competition from recovery or recycling activities. [↑](#footnote-ref-10)
10. The ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes. [↑](#footnote-ref-11)
11. This is a placeholder for a figure presenting developments in the energy sector, which will be added in the next version of the current document to be prepared for the special session of CEP in February 2016. [↑](#footnote-ref-12)
12. See methodology for assessing the water-food-energy-ecosystems nexus in transboundary basins (ECE/MP.WAT/WG.1/2015/8), available from [www.unece.org/index.php?id=38163](file:///%5C%5CUNECE-DATA%5CDATA%5CGROUPS%5CEhlm%5CEditorial%5Cin%20preparation%5Cwww.unece.org%5Cindex.php%3Fid%3D38163). [↑](#footnote-ref-13)
13. This is a placeholder for a figure presenting rates of recovery of minerals, rare metals, etc. from products across the pan-European region, which will be added in the next version of the current document to be prepared for the special session of CEP in February 2016. [↑](#footnote-ref-14)
14. See www.greengrowthknowledge.org. [↑](#footnote-ref-15)
15. Organization for Economic Cooperation and Development, *Taxation, Innovation and the Environment* (Paris, 2010), box 4.1. Available from <http://dx.doi.org/10.1787/9789264087637-en>. [↑](#footnote-ref-16)
16. These instruments or procedures are regulated, among others, by ECE treaties. For details, please see [www.unece.org/env/treaties/welcome.](http://www.unece.org/env/treaties/welcome.) [↑](#footnote-ref-17)
17. This is a placeholder for a figure illustrating the increase in the number of EIA applications, which will be added in the next version of the document to be prepared for the special session of CEP in February 2016. [↑](#footnote-ref-18)
18. For details please see eippcb.jrc.ec.europa.eu/reference. [↑](#footnote-ref-19)
19. Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control). [↑](#footnote-ref-20)
20. Clearinghouse of the ECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), available from http://aarhusclearinghouse.unece.org/. [↑](#footnote-ref-21)
21. The SCP Clearinghouse is still under construction. For details please see [www.unep.org/resourceefficiency/Policy/SCPPoliciesandthe10YFP/The10YearFrameworkProgrammesonSCP/GlobalSCPClearinghouse/tabid/102573/Default.aspx](http://www.unep.org/resourceefficiency/Policy/SCPPoliciesandthe10YFP/The10YearFrameworkProgrammesonSCP/GlobalSCPClearinghouse/tabid/102573/Default.aspx). [↑](#footnote-ref-22)
22. **Error! Hyperlink reference not valid.**. [↑](#footnote-ref-23)