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International Conference

"Promoting Eco-innovation: Policies and Opportunities"

Tel Aviv, Israel, 11-13 July 2011

Report on the International Conference "Promoting Eco-innovation: Policies and Opportunities"

I. Format and attendance

1. The International Conference "Promoting Eco-innovation: Policies and Opportunities" was held in Tel Aviv from 11 to 13 July 2011, in response to a proposal by the Government of Israel. This activity was in line with the Programme of Work for 2011 of the Committee on Economic Cooperation and Integration (CECI) of the United Nations Economic Commission for Europe (UNECE), which was adopted at the fifth session of CECI held on 1-3 December 2010. The Conference was organized in cooperation with the Prime Minister's Office and the Ministry of Foreign Affairs of the State of Israel.
2. The main objective of the International Conference was to provide a platform for a discussion and broad exchange of experiences and lessons learned among policymakers, representatives of business and academia and other experts and practitioners. Participants considered how innovation policies can contribute to address environmental and energy challenges, the existing barriers for eco-innovation and the ways in which the public and private sectors can collaborate to overcome these difficulties and to take advantage of emerging opportunities in this area.
3. The main outcomes of the Conference will be used as an input to the United Nations Conference on Sustainable Development (Rio+20), which will take place in Brazil on 4-6 June 2012.
4. In order to reinforce the learning component of the programme, the Conference also included site visits to selected organizations in Israel, where the visitors had the possibility to learn on different eco-innovative experiences.
5. The Conference brought together more than 100 participants – high-level policymakers, government experts, representatives from academia and the business sector – from 19 UNECE member States. Representatives from the European Commission and the Organisation for Economic Co-operation and Development also attended the Conference.

6. Conference participants were welcomed by Mr. Ján Kubiš, UNECE Executive Secretary, and Mr. Gilad Erdan, Minister of Environmental Protection of Israel, who opened the Conference with keynote speeches.

7. A high-level segment served as an introduction to the Conference, highlighting and discussing a number of central issues that were considered subsequently by speakers in different sessions.

8. The discussions at the Conference were organized in three thematic sessions covering different policy areas concerning the promotion of eco-innovation:

- (a) “Eco-innovation: what role for public policies?”;
- (b) “Fostering collaboration for successful eco-innovation”; and
- (c) “Financing eco-innovation”.

9. Leading experts in these areas from governments, international organizations, business and academia made presentations covering different related topics (available at <http://www.unecce.org/ceci/>). Individual presentations were followed by an interactive discussion with other participants in the Conference, which provided the opportunity for a broad exchange of views.

II. Summary of discussions

A. Opening speeches

10. A common theme in these interventions was the importance of collaboration, including at the international level, to ensure that eco-innovation materializes and provides an effective response to environmental challenges.

11. The Minister of Environmental Protection of Israel emphasized that eco-innovation is critical to address the challenges of depletion of natural resources and increasing pollution, as well as to create green growth opportunities and jobs. Eco-innovation is a symbiotic movement towards decreasing ecological damage and increasing economic viability. This has an important global dimension, since there is rapid growth but also strong environmental pressures in emerging markets, including through urbanization. New solutions, such as green buildings, smart grids and energy efficiency are required to manage this process. The public and private sectors need to be convinced of the environmental and economic benefits of moving towards a green economy.

12. Success on eco-innovation relies on developing a strong knowledge base in many areas, allocating the necessary resources to achieve scientific excellence. This requires the ability of governments to promote national strategic programmes to encourage research and its deployment into practical applications. Beyond encouraging research, eco-innovation greatly benefits from targeted financial support by the governments to mitigate risks to levels acceptable by the business sector.

13. Exchange of experiences and development of links for the circulation of information are important channels to advance eco-innovation. The Minister of Environmental Protection of Israel stated that one of the expected outcomes of the Conference would be the establishment of a platform for knowledge sharing and discussion of policies and good practices on eco-innovation, resulting in the creation of a network of like-minded professionals.

14. In his intervention, the UNECE Executive Secretary stressed the international dimension of eco-innovation initiatives. Diffusion of innovative technologies across

countries will play an important role in tackling environmental problems and reducing the pressure on resources. International cooperation can and should facilitate technology transfer. Moreover, technological breakthroughs need coordination to channel investments and to avoid duplication, while addressing barriers that prevent the development and transfer of eco-innovative solutions at the international level.

15. Cooperation is also important at the national level, due to the existing challenges and the multisectorial character of the necessary policy interventions. Different stakeholders need to be involved and an institutional space should be created for private-public cooperation. In line with the statement of the Minister of Environmental Protection of Israel, the UNECE Executive Secretary concurred that public initiatives are required to guide markets and share risks with investors.

16. Collaboration can overcome weak market incentives for the emergence of innovative technologies. Public initiatives can link established companies and academic institutes to develop research projects that can finally result in commercial technologies. Government sponsored programmes can also create the demand for innovation in the environmental sphere through appropriate regulations.

B. High-level segment

17. Interventions in the high-level segment developed some of the initial considerations made in the opening speeches and provided a framework for the discussions in the sessions that followed. The importance of international collaboration, its challenges and potential benefits, were also discussed in this segment.

18. Eco-innovation allows "doing more with less", thus overcoming shortages of resources and reducing environmental footprint. There are three areas where the world is facing global sustainability challenges: food, energy and water. These areas are interchangeable and complementary. Food and water can produce energy, while energy and water are needed to produce food.

19. Challenges are significant in scale but need to be addressed in a relatively short period of time. This emphasises the need for wide international collaboration and resolute action by public powers. While there is a general agreement on the need to undertake certain policies, the issue of how to shift to a new policy paradigm is still not fully addressed.

20. Eco-innovation goes beyond the development of new technologies and their application to industries. It is important to retain a broader view of eco-innovation that encompasses non-technological innovation and innovation in other sectors than manufacturing. Thus, eco-innovation is any innovation that minimizes or reduces the detrimental environmental impact of any activity.

21. Eco-innovation does not concern only the activity of firms. Environmental footprints are also the result of existing consumption patterns, which are related to lifestyles. Therefore, eco-innovation also requires individuals to change their behaviours.

22. In a competitive market-based economy, cost-minimization is a strong driver in reducing the use of resources, thus lowering pressures on the environment. However, market failures and policies misalignments require further government intervention to promote eco-innovation. The presence of negative externalities implies that environmental impacts are not fully taken into account by the markets and correcting mechanisms should be introduced. Path-dependency, which is inherent to the adoption of a certain type of technology or the use of specific assets in production or consumption, creates barriers to the introduction of new eco-innovative technologies that need to be overcome. The creation of

incentives may not be sufficient and legislation may be needed to directly constrain the activity of economic agents through regulatory means.

23. The debate on energy and clean technologies in general should not be limited to the merits of the different sources of energy in isolation from the ways in which energy is produced and distributed. Efforts should also be devoted to identify the ways in which conventional forms of energy could be utilized in a cleaner, more efficient way. Energy distribution is an important dimension of overall efficiency and should be an important element in devising innovative solutions to energy challenges. Energy efficiency, in particular, is a source of potential significant savings.

24. Eco-innovation has a clear international dimension. While it always generates benefits for the country involved, net results might be better, if other countries were also involved. If eco-innovation brings higher costs in the short term, this would create a negative impact on competitiveness. Environmental problems cross boundaries and therefore externalities can only be properly assessed at international scale. These arguments emphasize the importance of international collaboration.

25. There are some technologies that are already available but the key issue of diffusion remains unsolved. This is a critical dimension of the innovation process. "Green patents" could facilitate the diffusion of technology. International co-financing of research and development (R&D) could reduce the time necessary to bring costs down, so new clean technologies can be competitive with conventional solutions, thus accelerating take up of less environmentally harmful options. Carbon capture and storage technologies, which often involve significant outlays, are a good example of an area where concerted international action could bring better results.

26. The resource constraints faced by Israel have created the need for innovations, which have been supported by public policies. Considerable success has been achieved in many areas, including water technologies and solar power. Two examples of Israel's capacity in developing eco-innovative technologies are the work on the development of alternatives to oil as a fuel for cars and the innovative agricultural solutions found by the country's researchers and entrepreneurs. Israel has committed \$500 million for a 10-year programme focussing on 4 areas (biofuels, batteries and fuel cells, synthetic fuels and engines and vehicles). Israel aims to be a laboratory to test projects that, if successful, could be disseminated widely. International cooperation would facilitate scaling up solutions that have been developed domestically.

27. Eco-innovation can have a distributional impact (within and across countries) that needs to be monitored. The shift of capital, labour and finance to eco-friendly activities that support a green economy will have adjustment costs that need to be smoothed out so as to avoid social backlashes.

28. As necessary changes go beyond a purely technological dimension, the active involvement of stakeholders to make them happen is required. Innovation also needs to be social, not just technological. Eco-innovation should be the result of a widely-shared set of social values, which lead to projects that have large social backing. The policy instruments to be deployed are not just technical questions but need to be supported by social, political, and institutional considerations to guarantee successful implementation. In short, both the environmental and social dimensions of sustainability should be observed when designing and implementing eco-innovative solutions.

29. It is important to raise awareness of entrepreneurs, consumers and the general public on the damage to the environment resulting from their activities, the existence of clean alternatives and the benefits of applying green technologies. Ultimately, success with eco-innovation rests with a policy framework which is well-defined, stable over the years, based

on consistent economic and environmental criteria, and supported by cooperation of all stakeholders.

C. Eco-innovation: what role for public policies?

30. Panellists in this session presented different policy experiences and discussed general frameworks to guide and interpret policy interventions in this area. A common view, which was echoed in other sessions, was the need to devise programmes that are both comprehensive and inclusive, so as to properly assess environmental impacts and draw all relevant parties to address them.

31. Governments are expected to play multiple roles in promoting eco-innovation. These include not only direct support to R&D and facilitating the exchange of knowledge but also stimulating the demand for eco-innovative solutions and raising market acceptance among consumers.

32. The promotion of eco-innovation requires a balanced strategy that combines different policy tools. The starting point must be the appropriate pricing of environmental goods and services. Supply-side measures, such as R&D tax credit or subsidies, need to be accompanied by initiatives that increase the demand for eco-innovative products. Green public procurement, in particular in construction, where the public sector has a large presence, is a significant policy lever. Removing barriers to trade is also important, as the size of the market is an important determinant of the development of eco-innovative solutions. This suggests that appropriate support should be given to initiatives to support the internationalization of small and medium-sized enterprises (SMEs).

33. The role of governments in promoting eco-innovation concerns not only new regulatory or economic instruments but also facilitating partnerships and encouraging cooperation. This has been an important principle in guiding eco-innovation policies in the Netherlands. Chain-oriented policies aim to bring together economic agents and encourage them to achieve a reduction of environmental pressures beyond what is required by legislation. Policymakers should focus their efforts on chains with the highest environmental pressures, which may be different from country to country.

34. Bringing together different partners, including researchers, facilitates thinking on new ways of doing business and innovative concepts for products and services, which are attentive to lifetime considerations and help to reduce environmental pressures to a minimum.

35. The policy mix in different countries depends on national circumstances, including the knowledge base, the size of the domestic market, the industry structure and the development of specialized financial intermediaries, such as business angels and venture capital firms.

36. A life-cycle approach in the conception and design of public policies promoting eco-innovation appears most fruitful, as it provides a framework to integrate a large set of interventions in different areas under appropriate time frames to assess their implications.

37. The type of policies depends also on the maturity of technologies. At the very initial stage, covering the development of prototypes and demonstration of new technologies, public support focuses on infrastructure planning, R&D financing and contribution to capital costs of large-scale demonstrations. At a later stage, some technologies may be already suitable for niche markets but they still find significant cost disadvantages. At this point, technology-specific incentives, such as feed-in tariffs, tax credits or loan guarantees could be appropriate. As technologies mature and become more competitive, support can be reduced and become more general. For mature technologies, the key policy question is how

to accelerate its adoption by addressing market barriers through instruments such as building codes, efficiency standards and information campaigns.

38. "Picking winners" in eco-innovation, as in other forms of government support, is fraught with dangers, as the information to make appropriate choices is not available. Promoting general support technologies avoids the pitfall of making specific technological choices while providing flexibility. "Green technologies" is a very broad concept and potential solutions may come from many different areas of sciences. From this point of view, policies that would support very concrete technologies cannot be efficient. Instead of this, policies should be horizontal, rely on incentives and make more general technology bets.

39. From a broad policy perspective, it is important that the focus is not only on achieving particular technological breakthroughs but also on facilitating the dissemination, both within and across countries. Multilateral cooperation should also involve developing countries, emphasizing capacity-building activities that facilitate technology transfer. This needs to be supported by appropriate funding arrangements.

40. The diffusion of eco-innovation is largely a process driven by the markets. As each green technology has substitutes, there is competition with conventional alternatives with a larger environmental impact. Therefore, policies to facilitate diffusion should ensure the increased competitiveness of eco-innovative solutions.

41. Supply considerations are not sufficient. It is important to increase the demand from the private sector for eco-innovation through changes in relative prices. However, this may not be sufficient either. The provision of new infrastructure is required to avoid the lock-in of existing patterns of demand. A good example is the need for charging points for electric vehicles. A long-term vision for the future is necessary to shape appropriate investment policies.

42. Entrepreneurship is the key driver of change, including eco-innovation, so policies need also to pay attention to the removal of barriers to entry and exit of enterprises while addressing problems of access to finance, which are particularly acute for small and medium-sized enterprises. Younger firms tend to be greener innovators and should be the object of special policy attention as part of the effort to encourage the transition towards a more resource-efficient, eco-innovative economy. More generally, this shift would also be facilitated by firm-level support to upgrade the skills and production processes of companies, so that they can adapt to new market conditions and actively promote change.

43. There is a need for more and better information on eco-innovation support instruments to facilitate coordination of national policies, to identify best practices in an international context and to create channels to sharing them. As eco-innovation is influenced by a wide portfolio of policies, it is important that appropriate institutional mechanisms of collaboration are put in place.

44. The European Union has developed a number of schemes that track eco-innovation policy plans and performance in member countries. The Eco-innovation observatory is a good example of a collaboration mechanism to facilitate the understanding of policies and exchanges of experiences in this area. Other initiatives, such as the ECOPOL project, aim to further understand eco-innovation dynamics and the role of public policies in order to identify best practices. While eco-innovation has facilitated the relative decoupling of GDP growth and material resource use in the European Union, there is a high degree of diversity in terms of eco-innovation performance. The analysis of national Environmental Technologies Action Plans shows a bias towards supply side instruments, with less consideration of demand side actions, such as standards and regulations.

D. Fostering collaboration for successful eco-innovation

45. Presentations in this session continued the discussion on policy experiences, while emphasizing further the integrative character of eco-innovation policies and the reliance on collaboration for effective implementation. A variety of national and sectoral examples were presented, which illustrated different aspects of collaboration on eco-innovation initiatives.

46. The emerging new eco-innovation paradigm sees the environmental dimension as a business opportunity. From a policy perspective, environmental considerations are increasingly embedded into economic processes. Concerns on climate change mitigation have acted as a powerful integrator of environmental considerations and economic and innovation policies. Eco-innovation is a persistent challenge in the presence of continued increases in consumption and population growth.

47. The scope for collaboration is vast, since eco-innovation goes well beyond the narrower focus of traditional environmental policies. Eco-innovation concerns potentially all companies and markets and emphasises the reward of eco-innovative activities through appropriate incentives rather than the penalization of polluters.

48. Collaboration between the public and private sectors serves to overcome barriers to innovation. Some large projects with significant costs and large risks can only be taken through joint efforts. A good example are the pilot projects on carbon capture and storage. Multiple initiatives suggest that consolidation of efforts could yield strong benefits. The acceptance of eco-innovation initiatives depends on the support of users and this can be boosted through collaboration.

49. In order to successfully address sustainability issues, it is important to consider the design, production and manufacturing of a product across its entire life cycle. The use of a holistic life cycle perspective helps manufacturers and policymakers to identify improvements that could be made at any stage. Information through the whole life cycle of a product should be collected to identify possible actions. The data need to be shared and exchanged between many different organizations. This complex web of collaboration can only be managed through standards to facilitate communication. The usefulness of standards depends on how widely disseminated they are. From a more general point of view, standardization is important to facilitate innovation and can be developed more efficiently through the collaboration between different stakeholders.

50. Eco-innovation is a process that originates with an invention, which is introduced in the market successfully. The extent of its impact depends on the degree of diffusion. This is related to absorptive capabilities, including skills, but also to the existence of open markets, which is also the result of continued collaboration across borders.

51. International cooperation is necessary to avoid the disincentives to innovation that emerge when the outcome of national efforts cannot be fully appropriated at the national level. International trade raises a number of questions that need to be addressed, including the diversity of environmental standards and the different policy importance attached to environmental targets.

52. The question of patents is also challenging. It is important to create the right incentives for innovation but a regime that is too strict prevents diffusion. Patents serve to protect inventions but also to disseminate information about technology, which otherwise would remain unknown. Therefore, there is also a basis for collaboration. There are also "green patents", which have been made available by businesses free of charge to facilitate technological diffusion.

53. National programmes have to be implemented to bring together all relevant stakeholders in a particular sector or project, which provides the basis for successful international cooperation. Collaboration is necessary to accelerate the implementation of solutions that have been proven in a certain context, facilitating the necessary adaptation. Presentations in this session provided examples of how this has been done in the important water utility and agricultural sectors.

54. Wide stakeholder consultation is necessary to achieve consensus on long-term priority directions to support eco-innovation. Technology foresight centres can facilitate the development of common views on a green growth strategy that provides guidance and reassurance to relevant parties. Conference participants were informed about the ongoing experiences of Ukraine in this area.

E. Financing eco-innovation

55. This session discussed various policy initiatives aiming to ensure that the necessary financial resources are available to develop eco-innovative solutions, thus helping companies to overcome the constraints faced by innovators. Participants agreed that financing eco-innovation requires the combination of public and private efforts and that the main aim of public initiatives is not to replace private financing but to encourage its involvement in eco-innovative projects.

56. There is a strong projected demand for environmental innovations, which is a source of business opportunities. Environmental innovations or "clean-tech" include new technologies that are able to compete on price and performance, while reducing environmental impact. This implies a wide range of potential sectors for investment, encompassing energy, transportation, industrial processes, production of materials, recycling and waste, among many others.

57. Environmental innovations need to overcome the "valley of death" - the period during which significant development resources are required that cannot yet be offset by revenues. The size of this gap and the possibilities to finance it depend on perceived risk, capital intensity and the time required for commercialization and scaling up.

58. There are a number of characteristics of environmental innovation which make raising finance particularly difficult. Business opportunities are largely linked to regulation and government policies, which determine to what extent new technologies face competition from existing ones. As regulations and policies can change, this creates an additional source of uncertainty. If opportunities are driven by subsidies, markets may be collapse if this form of support is abruptly removed.

59. In some cases, capital requirements are significant. The time to develop some technologies may be very large, which will exceed most investors' horizons. The end-products (for example, electricity) cannot often be differentiated on the basis of the technology used. Moreover, there are complex patterns of interdependencies, as the commercial success of a particular technological innovation depends on the availability of other innovation or the creation of a suitable infrastructure (i.e. electric cars).

60. Potential investors have only an imperfect knowledge of business opportunities, so market mechanisms may lead to insufficient funding of ideas, which are socially relevant and with the potential to be commercially successful.

61. Eco-innovations often require new business models and involve changes along the complete value-chain, resulting in the transformation of whole sectors. This goes well beyond the adoption of end-of-pipe solutions to encompass more comprehensive proposals with a larger transformative potential. Given these characteristics, which impose significant

coordination requirements and require costly and time-consuming infrastructure investments, financing problems are particularly acute.

62. The need for life-cycle assessments increases uncertainty and the difficulties of estimating the cost of eco-innovations. Unintended consequences, which result from the impact of eco-innovation on other environmental dimensions (for example, the introduction of biofuels) cause problematic effects on other aspects of sustainability, which may affect the ability to raise finance.

63. Many of the suppliers of environmental technology are SMEs, which face traditional disadvantages in competing for finance. At the same time, SMEs are a factor of economic dynamism and show increased presence in providing low carbon technologies, and should therefore be supported by public policy.

64. Venture capital is a specialized form of financing that can contribute to the development of new technologies. However, it has clear limitations regarding the size of financing it can provide and the risks it is ready to assume. Venture capitalists have only limited information on new firms and are prone to herding tendencies. A general trend that has been observed is the shift of venture capitalists to less risky stages of technology development. Moreover, there is often a mismatch between the regional ability to raise venture capital and the location of the potential innovations that could be financed.

65. Therefore, venture capital financing can only be seen as a partial solution to the problems of financing eco-innovation, which should be dealt with in a more comprehensive fashion, paying attention to the different stages in the development of eco-innovative solutions and the changing levels of risk and financing needs.

66. Other financial intermediaries need also to be engaged in these efforts. Eco-innovations can be associated to structural changes that undermine the market power of incumbents. As a result, these established companies are unlikely to be a source of capital.

67. Business angels (informal venture capital investors) can play an important role in exploring the potential of new ideas, as they are able to consider a number of small size investments which would not attract the attention of other investors.

68. Clean-tech is not only about renewable energies, which have strong capital requirements. There are also other areas, which may face significant risks, but where financing needs are smaller, thus opening the door for the involvement of business angels. Investment clubs, operating through syndication, facilitate pooling financial resources and developing a specific investment focus, backed by specialized expertise to source and select investment opportunities.

69. The SBIR programme in the United States is a good example of a tested policy instrument to help business to cross the "valley of death", providing funds for proof of concept and prototype development, in a flexible, decentralized and staged manner that facilitates appropriate selection of investment opportunities and creates the right incentives. The programme also stimulates linkages between universities and industry. Well-run government programmes provide "certification" effects that encourage private investments in beneficiary companies.

70. While public support is important to address financing gaps, it is critical that schemes are comprehensive enough so that bottlenecks are also addressed. Partial coverage can lead to a waste of resources.

71. Financing gaps may vary across countries. For example, the Israeli cleantech sector appears relatively well financed at the seed stage. However, financing of growing companies beyond this initial stage is a challenge, given the low number of specialized venture capital funds and the lack of interest of institutional investors, such as pension

funds, which makes fundraising difficult. Specific forms of support, with a sectoral orientation, may be required to spearhead the interest of venture capital companies in this area.

72. Eco-innovation is a global challenge but also a global opportunity, therefore it is important to facilitate international contacts to exchange knowledge and pool resources, including through access to some of the world most successful clean-tech clusters. While environmental challenges are global, a patchwork of regulations across multiple jurisdictions provides a challenge for eco-entrepreneurs. Facilitating cross-border investments is important to attract financing but also to gain access associated expertise to develop and scale-up local innovations.

73. Large companies can provide a market for SMEs, a source of finance and an exit mechanism for investors. Although there is some progress, the market for environmental technologies is not characterised by the sort of symbiotic relationship that can be observed in the pharmaceutical industry between large companies and SMEs. An alternative is the licensing of intellectual property, which is often favoured by university technology transfer offices, but this is an option that reduces potential returns for innovators.

74. Given the difficulties involved in these different routes for the commercialization of technology, it is important to provide multiple types of support, including those that target the creation of consortia between various types of companies to develop supply chains. The experiences of the Carbon Trust in the United Kingdom provide examples of various types of initiatives in this area.

75. Strategic intelligence, developed with inputs and guidance from public initiatives, can help to improve risk perceptions and therefore facilitate raising finance. Developing predictable policies with a long-term orientation is a major responsibility for the authorities, who need to anticipate changes and to encourage the private sector to take adaptive actions before abrupt adjustments are imposed as a matter of necessity.

76. The power of incumbents is particularly strong in many areas related to eco-innovation. Thus, while new technologies hold the promise to address global energy and climate challenges, traditional interests often dominate public debate. However, participants at the Conference also stressed the risk of inaction by established companies that fail to adapt to the need to provide new technological solutions to environmental challenges.

77. Financial support should not be provided in isolation but taking into account other needs of eco-innovators, which include the development of links with potential customers and collaboration agreements with holders of complementary technologies, among others.

78. Israel has accumulated a significant policy and practical experience in eco-innovation financing. The moderator of the session, conveying a message from the Prime Minister's Office, proposed the creation in Israel of a global centre of excellence in eco-innovation financing, in collaboration with the United Nations Economic Commission for Europe.

III. Site visits

79. Delegates of the Conference also participated in a programme of site visits to a number of organizations in Israel, which provided them with the opportunity to get acquainted with some leading achievements in the practical application of eco-innovative technologies. The institutions in this programme were:

(a) The "Shafdan" Water Reclamation Plant, an advanced mechanical-biological facility which produces high-quality irrigation water for all types of agricultural crops in Israel;

(b) The "Ariel Sharon Park", which is the largest environmental rehabilitation project in Israel, and "Arrow Ecology", a waste separation and treatment plant located within the park; and

(c) "Aqwise", a world leader in the development and implementation of advanced water and wastewater treatment solutions for the industrial and municipal markets.

IV. Summary of main conclusions

80. The Conference provided an opportunity for a wide exchange of views, bringing together multiple perspectives that ensured a rich and fruitful debate. The main conclusions of the discussions included:

(a) Eco-innovation is becoming a mainstream concern in policymaking, having an increased influence in many domains. While there are important differences across countries, the general trend is clear. Climate change and the environmental pressures resulting from economic growth imply that the importance of eco-innovation will be increasingly recognized.

(b) The promotion of eco-innovation requires a comprehensive strategy that pays attention to both supply and demand-side measures. Policies should target both the generation of innovation and the dissemination of existing technologies, both within and across countries.

(c) Eco-innovation is a broad concept that includes also non-technological forms of innovation and has the potential to impact all the economic sectors. The policy focus should include not only productive activities but also consumption patterns.

(d) Changes in relative prices can increase the attraction of eco-innovative solutions but these economic incentives may not be sufficient. Investment in infrastructure is necessary to break path dependency. Regulatory measures may also be required to overcome market failures.

(e) Collaboration, in particular at the international level, is essential for the advancement of eco-innovation. This facilitates the exchange of policy experiences, the pooling of resources and the achievement of scale effects. It is important to establish the appropriate institutional, regulatory and policy frameworks that create a solid basis for this collaboration.

(f) Life-cycle considerations and chain-oriented policies are important for the effective promotion of eco-innovation. Governments have an important role to play in facilitating partnerships and encouraging cooperation among all relevant parties, including through the development of appropriate standards and channels of communication.

(g) The active involvement of stakeholders is necessary to create a favourable ground for eco-innovation and to ensure its social acceptability. Eco-innovation has a transformative potential, driving structural change, which will result in winners and losers across sectors and regions. The distributional impact of these changes needs to be monitored.

(h) Eco-innovation is increasingly perceived as a business opportunity, which could emerge in many different sectors. Predictability and stability of policies and

regulations are essential to ensure the growing engagement of the private sector in delivering eco-innovative solutions.

(i) Financing eco-innovation requires the combination of public and private efforts. Eco-innovative initiatives face particular difficulties in raising finance, given the characteristics of some environmental innovations, which makes public intervention necessary. The ultimate aim is not to replace private financing but to encourage it, lowering risks and providing strategic intelligence to reduce uncertainty.

(j) Strategies regarding the promotion of eco-innovation financing should be comprehensive, addressing any bottlenecks that may arise at different stages in the development of eco-innovative companies, so to avoid any gaps. Policy interventions are more effective, when financing support takes into account the broad needs of eco-innovative companies.
