

**GREEN GROWTH
AND SUSTAINABLE DEVELOPMENT
FORUM**

**Conference Summary
Report**

Addressing the social
implications of green growth

13-14 November 2014 - Paris, France



Introduction

The OECD held its third annual Green Growth and Sustainable Development Forum (GGSD Forum) in Paris on 13 and 14 November 2014 under the theme “addressing the social implications of green growth”. The aim was to explore the potential impacts of green growth policies on labour markets, income and households, as well as how governments might best design policy frameworks to address distributional consequences, and relevant indicators for measuring progress.

The plenary sessions on Day 1 of the GGSD Forum focused on two primary social challenges associated with green reform:

1. Potential impacts on households
2. Potential impacts on labour markets and income

Session 1, in conjunction with the International Energy Agency (IEA), examined the household implications of environmental policies from the energy reform sector perspective. The Session took into consideration the kind of impacts that carbon pricing, fossil fuel subsidy reforms and government incentives for investment in low-carbon and energy efficient technologies can have on households, and how those impacts can vary from household to household.

Taking into account relevant issues such as consumption patterns and differentiated impacts of policy-related price increases for household goods and services, Session 1 also aimed at elucidating questions such as:

- How can household impacts best be anticipated and quantified?
- Will greening the economy raise energy prices and increase fuel poverty?
- Under what circumstances can reforms have regressive effects? Which policy responses can best address these effects?

Session 2, under the theme “Inclusive labour markets for green growth, national and local perspectives”, was held in conjunction with the OECD’s Employment, Labour and Social Affairs Committee (ELSAC) and Committee on Local Economic and Employment Development (LEED). It aimed at proving that green growth would benefit production and employment sectors, with:

1. Additional jobs in growing “green” sectors; and
2. A reduction or shift of jobs in CO₂-intensive or traditional resource intensive industries.

The session also stressed the need to develop workers’ new skills, which will consequently have important income effects. Questions about how gains and losses will be distributed in an equitable manner arose during the discussion and it drew observations on how policies can aid boost investment in alternative job opportunities at the local level.

To that end, Session 2 looked at:

- Different kinds of structural adjustment pressures on labour markets and how they can be managed;
- The main opportunities and risks that lie ahead- future skills gaps, workforce inequalities, structural transitions;

How different levels of government, unions and employers can be co-ordinated to address the challenges and opportunities that lie ahead.

The proceedings then broke out into parallel sessions of two groups (Group 1: Active labour market and skills policies for green growth: Joint Session with the International Labour Organization; and Group 2: Social protection and redistribution policies for green growth).

Finally, a closing session, chaired by Simon Upton, and closing remarks by Deputy Secretary-General Rintaro Tamaki rounded off Day 2's proceedings and closed the third annual GGSD Forum.

Key Findings

The key high-level conclusions and knowledge gaps identified during the 2014 Forum included the following:

- **Carefully designed policies can mitigate inequality and environmental damage caused by economic growth and lead to green growth.** Given the economic and social difficulties that all countries face, the challenges for growth-enhancing, redistributive and environmental policies continue to be considerable. In order to secure acceptance from concerned populations, these policies must be seen both to stimulate growth and to benefit low income households, or secondary policies should be introduced in order to address distributive concerns.
- **Energy policies** cut across multiple sectors and attempt to achieve multiple objectives. Energy efficiency delivers several different benefits which are not currently fully taken advantage of, or well quantified. It was therefore identified as necessary to demonstrate the cost-benefit analyses in order to achieve a global, long-term view of energy policies.
- **Better address the green transition through training and education programmes.** It is essential to highlight the value of transferable skills for workers moving from sectors in decline to new and emerging areas. Other important elements for advancement include change management, local leadership for green growth- including flexibility to adapt national programmes to local labour market conditions- and strong communication skills.
- **Consider the transferability of existing skills and ensure that new jobs are better and decent.** Efforts must also be made in the area of social innovation and new business models. Social issues such as the informal economy and the under-representation of certain workers should also be addressed.

An integrated, holistic approach was identified as the best option to:

- **Enhance research on the benefits of green growth policies.** Developed and developing economies can achieve green growth without it being detrimental to their economic progress by mainstreaming the green economy into day-to-day lives of consumers.
- **Increase and improve the labour market and social impact assessment.** It was identified as necessary to communicate the potential benefits of green growth policies, raise public awareness and mobilise political support for mainstreaming environmental sustainability in development strategies. Overcoming the lack of data across a range of areas such as health, jobs and energy efficiency is imperative.
- **Better understand the linkages between labour and environment-related policies.** Studying the implications for labour markets of transport, urban design and rural land use is needed, as are more indicators for evaluating and

monitoring policy coordination mechanisms to link labour and environmental policies.

- **Improve understanding of the *distributional* impacts of green growth policies.** In order to ease the transition and avoid further inequalities, proper assessments of who gains and who loses in the long-term is needed.
- **Enhance policy alignment through inter-ministerial co-operation and collaboration.** In order to address and develop effective green growth policies, the creation and maintenance of effective communication and co-ordination between social and economic ministries is imperative.

The Green Growth and Sustainable Development Forum was established in 2012 to facilitate knowledge exchange and exploitation of potential synergies across different policy fields and disciplines, to aid detection of knowledge gaps and help better target OECD Committee and individual government work programmes. To help governments address the social implications of green growth, relevant OECD Committees are encouraged to review how social issues related to green growth could be incorporated into their proposed work programmes for 2015-2016. These include the Investment Committee, the Environment Policy Committee, the Committee on Industry, Innovation and Entrepreneurship, the Development Assistance Committee and the Insurance and Private Pensions Committee.

Day 1

Opening remarks

Mr. Simon Upton, Director of the OECD Environment Directorate, opened the 2014 GGSD Forum by stating that this year's theme was chosen in order to highlight social impacts that have often fallen behind when compared to other research areas and knowledge gaps, since the GGSD's inception.

Mr. Upton also pointed out that while some progress has been made through the implementation of economic policies, recent OECD work has demonstrated that rigorous environmental policies do not harm, and can in fact benefit productivity and economic growth as a whole. Nevertheless, significant progress on social policies has not yet borne its results, provided that the focus has frequently been on the value added that a green transition can bring to job creation, without taking into consideration other social impacts. He further stated that it is imperative to gain public trust and to convince both the public and policy-makers that any negative or seemingly unjust impacts on employment, income or households will be dealt with fully and fairly; and as such, the forthcoming report on tracking Green Growth progress, to be released in time for the 2015 OECD Ministerial Council Meeting, will demonstrate in detail the commitment that governments have allocated to these issues.

Furthermore, Mr. Upton highlighted that in order to overcome income inequalities, it is imperative to align better environmental and social policies, even in what have traditionally been more "equal" societies.

Concerning the morning session of Day 1, Mr. Upton noted that the aim of the session was to position discussions firmly in the appropriate broader context of inclusiveness and developments related to economic growth. OECD colleagues from the Directorate for Employment, Labour and Social Affairs, the Statistics Directorate and the Economics Department were to consider developments on growth and income inequality, how multi-dimensional living standards intersect with inclusive growth, and the role of green growth.

As such, the aims were to:

1. Look at trends in income inequality, relevant policy tools and their impact to date;
2. Explore the multi-faceted nature of inclusive growth and the implications of including non-income dimensions (such as education or health outcomes) in a broader context of living standards, such as well-being;
3. Draw out principal policy implications of moving towards more inclusive models of economic growth (for green growth policy development).

Looking at the sessions on Day 2, greater detail was to be given to effective policy responses as well as solutions to mitigate unfavourable distributional effects. Parallel session 1, co-hosted with the International Labour Organization, focused on smooth structural adjustments across industries; and parallel session 2 explored the role of tax and the welfare system as tools to assist poorer families; with the aim to draw out knowledge gaps and research priorities.

It was further noted that inclusiveness plays a key role in policy making for all countries. From the Ecole Polytechnique based in Paris, **Ms. Patricia Crifo** demonstrated the links between social justice and the environment, and how policy can effectively integrate environmental considerations, while **Ms. Márcia Muchagata** from Brazil's Ministry of Social Development and Fight Against Hunger elaborated on how inclusiveness proved to be the starting point for green growth in Brazil.

Mr. Upton concluded that this third annual GGSD Forum brought together experts on environment, employment, social affairs, tax policy, and local economic and employment development affairs. In order to deliver on green growth, he stressed the need to co-ordinate across Ministries, disciplines and OECD Committees. Mr. Upton added that the Forum should be taken as a chance to be challenged and stimulated by other perspectives and by exchanging ideas and views with experts from various disciplines.

Scene-Setting Session: Going for Inclusive Green Growth in an Increasingly Unequal World

Chair: Simon Upton, Director, Environment Directorate, OECD

Growth and Income Inequality, Multi-Dimensional Living Standards and Inclusive Growth, and the Role of Green Policies in an Inclusive Growth framework

Mr. Stefano Scarpetta (Director, OECD Directorate for Employment, Labour and Social Affairs) made the first presentation of the Scene-setting session on the subject of “**Growth and Income Inequality**”. He noted that it is important to understand the economic and social context in which green policies are designed and implemented. He discussed questions such as who stands to benefit the most from the “green” transition and who could lose; how the negative distributional effects of the green transition can best be minimised, and possible compensation measures to alleviate the potentially negative outcomes of inequality and poverty.

Income inequality has increased significantly in most OECD countries, with the incomes of the richest 10% of the population worth, on average, 10 times more than the poorest 10% of the population. In some countries that figure is 30 times greater and even some countries which have traditionally been egalitarian such as Sweden, Denmark and Germany have seen deficits between the richest and the poorest sectors of society rise starkly.

The economic crisis has of course had a considerable impact on these disparities, with more vulnerable people losing their jobs and the efforts to stabilise growing inequalities being stymied by budgetary constraints.

Mr. Scarpetta’s presentation highlighted that inequality is not only a social and political concern: there is also an economic rationale. As US President Obama observed, “Inequality has deepened. Upward mobility has stalled. The cold, hard fact is that even in the midst of recovery, too many Americans are working more than ever just to get by; let alone to get ahead.”

It was also stated that the main drivers of household inequality are skill-biased technological changes, globalisation which puts pressure on policies and institutional reforms, and certain regulatory reforms which have had a positive impact on aggregate employment but which at the same time, have been associated with increased wage inequality.

Considering these problems through a “green prism” can help green growth to be inclusive, and identify and minimise potential tensions between green growth policies and inclusive growth such as regressive environmental taxes and job losses due to carbon leakage or restructuring.

Mrs. Martine Durand (Director, Statistics Directorate, OECD) provided a presentation on “**Well-being, inclusiveness and green growth**”, which highlighted the necessity to integrate different aspects of growth through a new conceptual and measurement framework; identifying the disconnection between the economic reality and people’s perceptions of their own conditions as a key underlying issue.

The presentation demonstrated the OECD’s multi-dimensional well-being framework which focuses on people’s conception of well-being rather than the economic system or GDP. The framework considers that GDP growth alone is not a reliable metric to measure people’s well-being; it should be recognised as a means to an end, not an objective in and of itself. The framework also examines both averages and inequalities; objective and subjective aspects, as well as both the short and long term outcomes.

In terms of monitoring countries’ performance across 11 dimensions of well-being, Mrs. Durand highlighted the OECD’s *How’s Life?* publication series which contains a dashboard of 25 headline indicators (approximately 2 per dimension), together with 30 secondary indicators. This comprehensive measurement framework can be used to develop an accurate and thorough assessment of countries’ relative strengths and weaknesses, and help countries develop appropriate policies, thereby avoiding the Kuznets curve, where countries “grow first, think about well-being later”.

Mrs. Durand also stated that it is through this initiative that policy trade-offs can be addressed while also identifying synergies (e.g. health and environment; environment and income, jobs and their distribution; environment and security, etc). Noting that there is still much to be done in order to achieve the “Inclusive Growth Initiative” goal, Mrs. Durand concluded by stating the ongoing. It is important to set a measurement agenda with timely dates for completion of well-being and inclusive growth data. It is also important to quantify policy links; this work has already started in ECO, ELS, and some other Directorates. necessity to introduce multi-dimensionality into policy design and analysis through OECD Country Surveys, Multidimensional Country Reviews, Going for Growth, Inclusive Growth National Case Studies (e.g. China), and Sectoral Policies towards Inclusive Growth.

A third presentation provided by **Mr. Giuseppe Nicoletti** (Head, Structural Policy Analysis Division, OECD) called “**Growing Greener and Less Unequal: What’s Needed?**”, focused on “the magic triangle”, which is comprised of three points: (a) being greener, (b) growing, and (c) being inclusive; with a focal point that Growth can increase inequality and worsen the environment- but it doesn’t *have to*...”

Mr. Nicoletti’s presentation showed that over the past 50 years, income inequality has often increased sharply and redistributive policies have become less effective in some countries. As the OECD publication *Policy Challenges for the Next 50 Years* shows, GDP growth on the whole is likely to slow down in the future, even though global GDP will more than quadruple, and cross-country income differences will narrow. If policies do not change, future growth can be expected to cause inequality to sharply increase and to prove detrimental to the environment. If policies go ahead as planned and are left unchecked, these developments should curb GDP levels and lead to large, system-wide disruptions. There is also a strong, prevailing belief that environmental degradation will affect poorer households more than other groups.

The presentation also looked at the role that policies have to play in this context. Concretely, environmental policies have become more stringent. Growth-enhancing policies have *not* been found to increase inequality or worsen the environment - other than indirectly by strengthening growth, provided that the policies are well-designed and flexible. As a conclusion, Mr. Nicoetti noted that redistributive policies may have become less effective over time in some countries, but not much is known about the effects of some policies, such as the effect of environmental policies on the distribution of income. It is necessary, moving forward, to be able to consider the whole range of effects and take appropriate action.

Making the Links between social justice and the environment

In her presentation, **“Going for Inclusive Green Growth in an increasingly unequal world” Ms. Patricia Crifo** (Ecole Polytechnique, Paris), noted that a major issue for inclusive green growth is the fact that social inequality and environmental problems are mutually reinforcing; findings which were backed up by a recent WHO report.

In terms of the inter-relation between environmental and social inequality, Ms. Cifo identified two mechanisms. Firstly, environmental conditions shape social capabilities and opportunities. This is mainly due to the absence of distributional justice. Environmental risks are not distributed in an equal manner, as there are inequalities in both the *access* to natural resources and the *inequalities* in exposure to environmental risks. An example of major inequality in access to natural resources is fuel poverty, which is defined as an individual or household who needs to spend over 10% of income to be able to adequately heat their home. 21% of households in Europe in total, 16% in France and 18,4% in the UK are defined as being fuel poor- figures which have tripled since 2003.

Secondly, inequalities in exposure to environmental risks and polluters aggravate social poverty. For example, in sensitive urban areas social and environmental inequalities are cumulative: people living in sensitive areas due to higher exposure to environmental risk often suffer from poor health. Average pollution levels are higher in big cities, especially in less affluent neighbourhoods, and blue-collar workers are more exposed to pollution, both professional (e.g. asbestos) and urban (e.g. fine particles).

The fact that social inequalities reinforce environmental problems means that the growth model inherited from the twentieth century has proven unsustainable not only because of its responsibility in excessive emissions of greenhouse gases disturbing climate, but also because of its contribution to increasing inequality, instability and economic crises, the most recent one being compared to the great depression of the 1930s.

Ms. Cifo concluded by citing a recent UNEP report (2011; Towards a Green Economy) that, “the causes of these crises vary, but at a fundamental level they all share a common feature: the gross misallocation of capital.” As such, the depletion of the world’s natural resources which has taken place over the past two decades in the name of development and growth – often irreversibly –has had detrimental impacts on the well-being of current generations and presents tremendous risks and enormous challenges for the future.

Moreover, it is clear that inequality is harmful for environmental public policies, it predicts biodiversity losses; and harms the development of environmental technologies

Concluding the Scene Setting Sessions, **Ms. Márcia Muchagata** (Advisor, Minister’s Cabinet, Ministry of Social Development & Fight Against Hunger) provided a presentation on **“Taking inclusiveness as the starting point for green growth: Brazil’s Bolsa Verde Programme”**. Ms.

Muchagata began by explaining the *Bolsa Verde* programme launched by the Brazilian government in 2011, through which families who live in extreme poverty in rural areas receive income in exchange for maintenance and sustainable use of natural resources — improving both the health of the forests and economic conditions. The program had as its aim to provide additional income to 73,000 Brazilian families through the end of 2014.

It constitutes one of hundreds of poverty reduction schemes in Brazil undertaken as part of the *Brazil Without Extreme Poverty Programme*. The *Programme* has 3 principle axes at its core: income transfer, rural and urban productivity inclusion, and access to public services. The *Bolsa Familia* programme involves 14 million families- that is, approximately 25% of Brazil's population. Every extremely poor family must be part of Bolsa Familia and other social policies, with an active search being undertaken to include families most in need in both urban and rural areas.

Behind the programme is the idea that eradicating poverty is a strategic component of sustainable development. It is based on the principle of cash transfers with conditionality on environment conservation: families commit themselves to maintain a forested area and engage in sustainable production activities. In return, Bolsa Verde transfers US\$ 120 every 3 months to these families over a period of 2 years (with the possibility of renewal). Moreover, families are entitled to other services, such as training or technical courses, or minimum prices for 16 forest products.

In terms of spatial distribution, it covers 961 areas and monitoring reveals that 98,6 % of the areas are successfully maintaining the forest. Looking at the success of the programme, several factors have been identified: firstly, the implementation of registration and cash transfers is based on a simple design; secondly, priority is given to women, (who are the preferred account holders), thirdly, the projects are large scaled and easily reproducible or replicated, and fourthly, the programme sets clear targets, with the national extreme poverty line used as a gauge to select candidates for the programme. The programme is also, subject to rigorous and robust monitoring and evaluation.

The Scene-setting session was concluded by the Director of Environment, Simon Upton, who remarked that the OECD Environment Directorate is currently conducting its first ever Environmental Performance Review of Brazil.

Plenary Session 1: Energy sector reform and its impact on households.

Joint Session with the International Energy Agency

Chair: Dominique Bureau, Deputy Director, French Ministry of Ecology, Sustainable development and Energy.

Domestic energy efficiency has an important role to play in energy sector reform, and it is therefore crucial to assess the distributive effects of such reforms. Theoretically, this seems straightforward, with the establishment of clear price signals, and the resolution of potentially adverse distributive effects through general redistributive instruments. In practice, however, it is difficult to introduce carbon pricing or to remove environmentally harmful subsidies. It is timely, therefore, to set a realistic and efficient framework to address these issues. The presentations in Session 1 provided an insight on these topics.

Panel Discussion

Mr. Andrew Leicester (Manager, Public Policy, Frontier Economics) provided a presentation on “**Climate policy and energy pricing in the UK**”. The presentation was based on two recent reports: *Energy Use and Policies and Carbon Pricing in the UK* and *Household Energy Use in Britain: A Distributional Analysis*; and it focused on the negative distributional effects for households and how to alleviate these effects through appropriate measures.

Mr. Leicester explained that the UK energy use policy landscape is complex, comprising at least of ten policies which can affect marginal prices differently by user and fuel. Some policies affect certain users but not others, some affect different types of businesses, and some affect both electricity and gas prices, and others affect only one or the other of these two. This leads to very different implicit carbon prices, which is inefficient when trying to reduce emissions at least cost. Given this inefficiency, there is an economic case to remove the implicit VAT subsidy and introduce a new gas tax for households, even though this would have clear adverse distributional effects. For example, an elasticity of -0.3 would raise approximately £7.5 million and reduce household carbon emissions by over 8 million tonnes but in terms of adverse distributional effects, this would lead to a 3.3% loss of income for the poorest households and a 0.7% loss for the richest households.

Under this proposal, some or all of the revenues generated could be used to fund compensating changes to the tax and benefit system to counter these effects. Although initially costly, reform packages would still bring about progress on average. For instance, a reform such as an increase in tax thresholds, tax credits, and means-tested benefits by 1.2% would cost approx. £7.2 billion- that is, almost all the revenues generated by the reform (taking into account other additions as appropriate such as increase in tax credit for single

adults and for couples, increasing benefits cap limit and income support as appropriate). However, the reform would still be progressive *on average*, with those at the bottom end gaining about 1.5% in terms of income and those at the top losing out slightly. Noting that there would still be some inequalities in each income group, Mr. Leicester pointed out that other methods could be used as compensation for low-income households, particularly by paying for better home insulation. Even a small investment of £0.5 billion could fund 300,000 cavity insulations, 200,000 boiler replacements, etc.

Mr. Karsten Neuhoff (Head of Department of Climate Policy, German Institute for Economic Research (DIW Berlin) looked at “**Germany’s Energiewende: addressing socio-economic impacts of the energy transition**”. His presentation considered a framework for different elements of an energy transition. The photovoltaic sector was given as an example of where early deployment from one technology to another has proved successful, with early funding and technology progress making PV affordable for global large-scale use, which is a useful lesson to bear in mind for distribution implications of any future energy transformation.

Mr. Neuhoff also pointed out that distribution should also be considered in the context of *explicit* government policies, in order for governments to reassure investors that they will still have a steady revenue stream in the future. He further added that electricity represents less than a third of household energy bills, a proportion that has remained relatively constant since the 1980s. For poorer households, however, the impact of a higher share of energy costs has been more significant and three different types of policy options have been explored to address this distributional effect:

Option 1: Adjusting existing social transfers. Means-tested benefits can be adjusted relatively easily for households receiving them. However, studies have shown that half of the poorest 10% of households do not receive any means-tested benefits at all.

Option 2: Basic tax-free allowances can be implemented for electricity tax, e.g. with a threshold of 500 KWH per year and with some differentiation for energy inefficient households.

Option 3: Direct support for households in using electricity efficiently, such as by providing energy advice, which has been proved to lead to approximately 16% of savings. Support can also be provided for fridge replacement for poorer households.

On the whole, the German case has shown that a successful technology transition requires a sustained package with various policy pillars, such as standards and engagement, markets and prices, and strategic investment. It is also necessary to be realistic; full cost-competitiveness for a large-scale roll-out of renewable energy technologies will not be possible without a carbon price. Also, mechanisms and policy instruments are necessary to engage consumers and give them a sense of ownership in the energy transition process.

Mr. Pedro Luna Tovar (General Director for Non-Tax policy, Ministry of Finance and Public Credit, Mexico) followed with a presentation on “**Fossil fuel subsidy reform in Mexico**”, which stated that retail gasoline prices in Mexico do not accurately follow international prices. Moreover, the Mexican federal government has set prices for all energy sources (gasoline, diesel, electricity, LPG and gas), and introduced subsidies for gasoline in 2005. A measure of subsidies is the negative excise tax (IEPS) imposed on fossil fuels. These tax rates are calculated every month as the ratio of (adjusted) retail prices over (adjusted) international prices. As Mr. Tovar’s presentation explained, if the international price is higher (lower) than the retail price, the excise tax would be negative (positive). Up until 2005, the Mexican Government collected

a positive tax. From the following year (2006) to the present day, the tax has been negative: it is as if consumers were being subsidised. In 2008 the subsidy reached 1.8% of Mexican GDP. The subsidy was reduced to 0.3% of GDP during 2014, and it is expected that during 2015 the tax collection will be positive.

Subsidies distort relative prices and decisions made by consumers. For example, per capita consumption of regular gasoline in Mexico is more than two times (227%) higher than that of Brazil (another oil country) and 94% higher than Chile. Mexican per capita consumption is 118% higher than that of Spain and France, countries with GDP per capita about 3 and 4 times higher than Mexico's. Subsidies associated to consumption levels are regressive: The richest 20% households receive more than 50% of the subsidies for gasoline, while the poorest 30% of households receive only 0.9% of this subsidy.

In terms of Liquefied Petroleum Gas (LPG) prices, the same applies, with LPG being subsidised over the past 14 years. Again, the richest 20% households receive 32% of the subsidies of LPG, and the poorest 30% households receive only 16.9% of this subsidy.

Mr. Tovar further stated that the new reform should stop subsidies for fossil fuels. As of the amendment made in December 2013, private (both foreign and domestic) investors can refine oil, process natural gas, transport and deliver oil and natural gas derivatives, that potentially attract new investment. In August 2014, additional laws were enacted to reform the governance of the national oil and electricity boards, and to introduce independent directors for the very first time. A new upstream regulator will award and administer contracts, while revenues from oil and gas production will be managed by a new autonomous entity, the Mexican Petroleum Fund for Stabilization and Development. Finally, a transitory mechanism for gasoline and LPG pricing has been established. What this means in practice, is that from 2015 until 2017, the Federal Government will determine maximum gasoline and diesel prices, consistent with expected inflation and international prices. From 2018 onwards, gasoline prices will be liberalized and determined by market conditions and from 2017 onwards, this will also be the case for LPG prices, with a subsidy in place for the rural and urban poor.

First round of Questions and Discussions

Ms. Helen Santiago Fink (Acting Head, UNEP Built Environment Unit) suggested that a good way for the Mexican Petroleum Fund for Stabilisation and Development to reach the urban poor might be to finance low-carbon urban infrastructure. In his reply, **Mr. Pedro Luna Tovar** replied that the Fund is a long-term vehicle, and it cannot be spent within the next 5 years, provided that the Congress has a mandate to make all decisions on how those funds are spent.

Mr. Stanislav Shmelev (Environment Europe) observed that cross-sectoral and spill over effects of different types of renewables and technologies had not been mentioned. **Mr. Karsten Neuhoff**, in response, emphasised the need for simplicity; to focus on instruments themselves, and then deploy more advanced assessment methods if certain matters are being ignored.

Mr. Georg Schaeffer (Sector Project Sustainable Economic Development (GIZ), Germany) wondered about the households that benefit from the renewable energy surcharge and especially the wealthier households that are installing photovoltaic panels on their houses and whether those households were being taken into consideration. **Mr. Neuhoff** clarified that his study did not directly address these households, but that Germany provides a 20-year fixed rate of electricity remuneration for wind or solar production. As photovoltaic prices dropped dramatically, the tariff rate was not adjusted quickly enough. The mechanism has now been

adjusted to be more responsive to global market developments. However, if the aim is to have market-based aspects in the energy transition, it will be necessary to attract investors- some of whom will make money and some of whom will not. This is a general public policy, not just an energy policy issue. **Mr. Andrew Leicester** added that UK studies on the small scale feed-in tariff showed that it had proved to be regressive.

Ms. Ulrike Lehr (GWS Germany) wondered about the kind of energy access we want for the poor, whether it is more important to have a warm home and consume the same amount of energy as everyone else; or whether it is more important to get from A to B or to be able to drive an SUV as big as the neighbour's? **Mr. Leicester** responded that raising energy prices raised the political controversy surrounding such policies. It is therefore necessary to have a combined package of tax reforms to encourage households to retrofit their homes.

Ms. Derya Çağlar (Investment Support Office, Turkey) asked whether Mexico had a strategy to increase public support for fossil fuel reforms, in particular by the richest populations, or whether the government implement its reforms in spite of opposition. **Mr. Tovar** responded that public relations campaigns helped to show that gasoline subsidies were harmful to the poorest sections of the public due to the high pollution levels in Mexico City. Campaigns had also been set up to try to demonstrate the concrete benefits of public transport.

Mr. Hector Pollitt (Cambridge Econometrics) observed that much has been written about the profitability of energy companies, and asked whether that has also been taken into account in the distributional analyses. **Mr. Neuhoff** replied that a recent change in profitability levels for utilities due to surplus capacity across Europe has helped to drive prices down. Utilities are therefore reporting low or negative profits these days, and in many cases, the market is the most effective instrument but stressed that dedicated policies are also needed to support investors.

The Clean Energy Transition and Energy Poverty

Ms. Laura Cozzi (Head of the Energy Modelling Unit, Directorate of Global Energy Economics, IEA) provided a forward-thinking look based on the IEA's **World Energy Outlook 2014** which provides energy market analysis and projections, and shows the changing dynamics of global demand.

Her presentation looked at energy demand by region, and noted that over the next three decades, energy demand and economic growth will decisively shift away from OECD countries, even with the Chinese growth slowing down in 2025-2030. India, Southeast Asia, the Middle East and parts of Africa & Latin America will take over as the engines of global energy demand growth, and this will affect the dynamics of international energy prices for oil, coal and natural gas.

Nearly 1.3 billion people do not have access to electricity and 2.7 billion people rely on the traditional use of biomass for cooking, which causes harmful indoor air pollution; numbers that are important to consider when discussing "green" or inclusiveness growth issues. . Diverging trends in household energy expenditures means that as of 2013, European households spent approximately 4000 USD (or 8% of income) on energy. However, data in 2013, shows that the bulk of European households' energy expenditure goes on oil (gasoline or diesel), which represents transport needs. The proportion spent on oil itself will decline in the coming years due to new efficiency standards and policies applicable to motor vehicles. Three-quarters of new cars coming into onto the market comply with energy efficiency standards. As for Chinese or Indian households, energy expenditures are different- they will rise steadily over the next

three decades, at a rate that is higher than GDP growth, taking into account an increasing share of income. This can be attributed to the fact that access to energy is increasing in these countries.

In terms of electricity prices, Ms. Cozzi noted that the proportion of income spent on electricity will grow world-wide, with large regional differences still apparent. Comparatively speaking, prices are high in Europe and Japan due partly to higher fuel costs and partly due to support for renewables. China has the greatest increase in electricity prices due to the tremendous change in its electricity intensity. However, improvements in energy efficiency moderate the increase in households' consumer electricity bills, boosting spending in other parts of the economy. Energy efficiency, therefore, has to be an integral part of any decarbonisation strategy.

Turning to Africa, the presentation pointed out that is the world's richest continent in terms of resources, but the poorest in terms of supply: in sub-Saharan Africa, 620 million people – two-thirds of the population – live without electricity. Only a handful of countries have electrification rates above 50%. Moreover, the poorest populations face the highest share of energy spending. Moving things forward, however, energy could act as an engine of inclusive economic development. According to the World Energy Outlook's Africa Century Case, by increasing the coverage and reliability of energy supply, it is possible to unlock an extra decade's worth of growth and narrow income inequalities. Energy policy is seen as strongly linked to the reduction of income inequality. For every \$1 invested in transforming the power sector, \$15 of new GDP is generated. Energy can therefore be a driver for inclusive economic development.

Distributional Impacts of Energy Subsidy Reform in Indonesia

Mr. Shardul Agrawala (Head of Environment and Economic Integration Division, OECD) presented on **Distributional Impacts of Energy Subsidy Reform in Indonesia**. The presentation looked at a study currently underway to model the three dimensions of subsidy reform in Indonesia: macroeconomic dimensions, environmental dimensions, and distributional dimensions.

Fossil fuel subsidies (FFS) in the world equal 544 billion USD per year for energy consumption subsidies (primarily in emerging and developing economies), and 55-90 billion USD per year for supporting fossil fuel production and use in OECD countries. The main reasons for phasing out these subsidies are three-fold: economic efficiency, environmental consequences, and equity. The G20 Pittsburgh declaration (2009) ensured that it should be high on national agendas to "rationalize and phase out over the medium term inefficient fossil fuel subsidies that encourage wasteful consumption".

Indonesian FFS represented 2.5% of GDP in 2011. Reform is high on the country's political agenda because of: (1) the budget deficit, (2) pressure on reserves, and (3) climate change and local air pollution. In spite of previous substantial efforts to reduce FFS, the issue remains a continuing challenge because of equity concerns. In terms of modelling the assessment of impacts of FFS reform in Indonesia, significant work has been done in three dimensions: macroeconomic and environmental, macroeconomic and distributional, and distributional. The analytical framework used considers the economy-wide effects of environmental policy as well as its household-level effects.

A number of phase-out scenarios for energy consumption subsidies were considered for Indonesia from 2012 to 2020, based on 3 different redistribution schemes:

- Cash transfer: all the households receive identical payment.
- Food subsidies: food & agricultural products are subsidized.
- Labour support: households receive payments proportional to their labour income.

Concerning the environmental impact, results have shown no real difference between the three schemes. As for macroeconomic impact, there was a slight increase in real GDP for all scenarios, with cash transfers delivering the greatest gains. In terms of distributional impacts, the poorest populations gained the most from cash transfers, followed by the food subsidies. Labour taxes, on the other hand, proved to be regressive. Regarding cash transfers in particular, the net effect was quite progressive.

Mr. Agrawala noted that overall, cash transfers were seen as the best way to phase out subsidies and make reform more equitable. It must be borne in mind, however, that the cash transfer scheme that was analysed was a highly stylised programme, and involved a uniform transfer to all households concerned. Other mechanisms could also be used to target the lowest income groups- differential compensation, time-bound benefits, etc.- and redistribution through infrastructure development could also deliver a very high rate of social return, but there is a need for further model development to be investigated in the future.

Plenary Discussion

Mr. José Manuel Medina Aguilar (Ministry of Environment Mexico) stated that main challenge is to shift mind-sets, both at governmental and at societal levels. The shift needs to take place from a sustainable development concept to one of inclusive green growth. What knowledge gaps, he asked, remained in order to achieve such a shift? He further pointed out that the recent OECD PISA report demonstrates that climate change and green growth still do not figure as subjects in school curricula. **Mr. Tovar** commented that the main knowledge gap in Mexico is the relationship between subsidy reform and its impact on the population at large, in particular the poorest populations. **Mr. Agrawala** mentioned that the issue of earmarking is key. In order for green growth to be successful, some kind of compensation on the social side is necessary. The additional revenues are then collected and placed in a central fund that the country decides how to invest. The notion of earmarking those funds for compensation purposes is not yet on the agenda.

Mr. Muhammad Abdelrehem (NODES Policy Incubator) noted that cash transfer can be thought of as one of the best mitigation tools in subsidies reform. However, cash transfer also has negative aspects, for example the inflationary effects.

Ms. Nina Campbell (IEA) noted the rising importance of energy efficiency, including its importance as a tool for addressing fuel poverty. The IEA study *Capturing the Multiple Benefits of Energy Efficiency* examined the impacts of energy efficiency at economic and social developmental levels. The study was a result of two years of collaborative research, and it demonstrated that a wide range of benefits to be derived from energy efficiency were still not being realised, such as energy security, deferring investment, growth impacts, improved productivity and competitiveness. Social development aspects with huge estimated positive impacts on health and reduced public health spending are also potential benefits of energy efficiency. Appropriate methodologies for capturing and quantifying all of those benefits are still lacking, and the study has made recommendations for further work. **Mr. Andrew Leicester** agreed that it is of paramount importance to demonstrate wider welfare benefits and

distributional impacts on health. Well-being could be used as an area where different benefits could be monetised.

Mr. Claude Crampes (Toulouse School of Economics) noted that there is a general consensus on the drawbacks of taxes and cash transfers. Block-rate tariffs are predominately becoming the solution to both promoting a reduction in consumption and improving access to energy for the poorest populations. For example, California has introduced a five-tier system that is not means tested. Block-rate tariffs may not be as good an idea as they seem. On average, consumption increases with a block-rate tariff system compared to systems based on an average flat price. **Mr. Tovar** agreed that such systems represent a false good idea. Mexico has had a block-rate system for the past thirty years. Graduate students who live in small apartments and consume no electricity during the day benefit from first tier prices even though they are comparatively well-off.

Mr. Tim Scott (UNDP) asked World Energy Outlook speaker **Ms. Laura Cozzi** for further details of the policy mix required to address the gap, in particular with respect to off-grid energy solutions. **Ms. Cozzi** replied that the IEA was aware of its own lack of information about electricity systems in Sub-Saharan Africa. In Nigeria, for example, a home diesel generator is something that everyone owns, and the installed diesel capacity is greater than in the Middle East. In urban areas, it makes sense to invest in grid extensions and conventional energies. In rural areas, however, electricity can be produced much more cheaply through decentralised renewable options. On the whole, it makes more sense to focus on hybrid systems rather than systems based only on renewables.

Ms. Dambudzo Muzenda (UNEP) asked to what extent the different scenarios for GDP growth were taken into account, provided that many countries have made a number of false starts in their reform attempts, and wondered whether the current reform episode be different. **Mr. Agrawala** explained that the OECD's Base 1 scenario for economic growth was used. Secondly, the study presented was a desk study carried out by modellers. The real political/economic challenges involved in actually implementing these scenarios could be lead to a significant set of reforms that might provoke the fall of the government.

Mr. Colin Brown (Chair of Working Party 2 on Tax Policy and Statistics of the OECD Committee on Fiscal Affairs and First Assistant Parliamentary Budget Officer in charge of the Budget Analysis Division of the Australian Parliamentary Budget Office), mentioned that compensation packages can more easily be implemented in countries that already have existing social infrastructure in place. In Australia, for example, 99% of the population can be reached by tax and social security systems. Given the size of the shadow economy in Indonesia, it is first necessary to invest in social infrastructure to then go on and develop a subsidy programme. This is a very significant problem faced by all developing countries, and further noted that the Brazilian approach, as outlined in the Bolsa Verde example, was therefore quite interesting.

Mr. Peter Poschen (ILO) requested further details about the approach on labour simulation. The focus appeared to be on the benefits of waged employment. The cash transfer system, highlighted particularly in the case of Indonesia, works well if the appropriate infrastructure is already in place. Brazil has successfully reduced the cost of labour while providing benefits for job formalisation – including access to social protection. **Mr. Agrawala** agreed that the modelling study assumes that cash transfers are possible, and that is quite a challenge for developing countries. In the context of India, the biggest innovation to occur in recent years is the introduction of a national ID scheme, which is a pre-requisite for any targeting mechanism. With respect to the labour scenario, the compensation provided is associated with formal income.

Mr. Rafael Cayuela (Dow Europe GmbH) asked whether any work had been done on the potential impact of the energy transition on industry and employment. The chemical industry, for example, has created 600,000 direct jobs around the world in the past 10 years. **Mr. Neuhoff** highlighted the need to differentiate between different types of industrial sectors. For 90% of industry, energy costs represent 2% of their total costs. For a number of very specific energy-intensive sectors, the potential impact will be much greater. It is therefore not possible to treat all industrial sectors in the same manner.

Mr. Dominique Bureau, Chair of Session 1, summarised the Session 1 discussions, as follows:

- First, energy policies (and energy efficiency policies in particular) cannot be assessed without looking at the distributive impacts, and it is therefore necessary to develop methodologies to assess such impacts.
- Second, a number of recommendations were made on energy policy, which is very complex and has many different objectives. It is therefore necessary to have a global, long-term view of what energy policy should be.
- Third, energy efficiency delivers many different benefits and it is necessary to demonstrate those benefits through cost-benefit analyses.

One topic that was not discussed was the need for inter-governmental coordination in developing a package of reforms aimed at integrated green growth. In order to do so, it is necessary to bring together the work of a number of different ministries.

Plenary Session 2: Inclusive Labour Markets for Green Growth – National and Local Perspectives

Joint Session with ELSAC and LEED

Chair: John Atherton

**Chair, Cooperation Action Programme on Local Economic and
Employment Development (LEED)**

Today's societies are faced with ever-greater challenges and levels of complexity, especially when it comes to environmental challenges and contingencies. As is the case in all complex policy challenges, it is necessary to break out of silos and see how different systems can work together. This quintessential modern policy challenge is reflected in Session 2, which was co-organised by 3 different OECD directorates: the Environment Directorate, the Directorate for Employment, Labour and Social Affairs (ELS), and the Local Economic and Employment Division (LEED). The focus will be on discussing national policy frameworks and how policies can be implemented on the ground.

The green economy can produce new opportunities for workers but only if they are in the right place and have the right skills. How can people be equipped with the skills they need to ensure this transition to a new economy? How can workers ensure they are not left behind in the restructuring of labour markets necessitated by that transition? Many prominent speakers shared their research and experience in this crucial area throughout this session.

Keynote Presentation: South Africa's "Working For" Programmes

Mr. Guy Preston (Deputy Director-General, Environmental Programmes, Department of Environmental Affairs) provided an overview of a range of South African programmes that are creating significant numbers of jobs. This year, it is estimated that 70,000 people will be employed in these programmes, with a strong emphasis on redressing the wrongs of the Apartheid regime.

The Working for Water programme fights the impact of invasive waterweeds (such as water hyacinth) and invasive terrestrial plants (such as European pine trees) on water quality, water runoff and evaporation, biodiversity etc. The programme has delivered huge returns on the investments made: 453 billion rands in terms of water quality alone, and over 3,200 jobs created. Wild fires are another significant problem associated with the invasive species, and the Working for Fire programme has led to 3.7 billion rands of savings for the forestry industry alone. 5,000 previously unemployed people are now fire fighters, 51% of whom are women.

The Greater Harmanus Water Conservation Programme was based on a 12-point plan that included an 11-point escalating block-rate tariff – "the more you use, the more you pay". Water use was reduced by 32% and revenues were increased by 25%. Water was more

affordable for the poor, and hundreds of jobs were created. As a result, a planned dam no longer had to be built, and a survey of all users showed that 96% supported the measures implemented. The programme was seen to promote equity and efficiency, and to get resources to the people who need them.

On the energy side, the cost of the new Medupi coal fired power station was compared to a number of green, labour intensive options in terms of water quality, carbon and jobs. In all cases, the costs of the green options were lower than the costs of the coal fired power station. However, it is difficult to implement such policies due to the focus on the *supply* side options around the world that subsidise the rich rather than investing in the poor. It is the *demand* side management and the conservation of supply options that will create jobs for the poor, in water and energy and even beyond.

Mr. Preston concluded by stating that South Africa has a Green Fund and is investing in a number of pilot programmes that are essential for ecosystem services. They are not simply subsidies but they sustain the economy and provide positive returns on investment. They provide jobs and training, and promote the dignity of workers. Green growth can be cost effective and labour intensive, and biosecurity represents as great an economic return on investment as a country can make. Political leadership has been pivotal in these programmes, which have seen their budgets increase from 25 million rands to 10 billion rands over the past decade.

Panel Discussion (1/2)

1. Opportunities and Challenges for Labour Markets in the Green Growth Transition

Mr. Alex Bowen (Principal Research Fellow, Grantham Research Institute, LSE) provided an overview of the broad findings of the *Issue Note* prepared for this conference. The transition to green growth can be consistent with both job creation and salary increases. However, it is not the answer to all labour market problems. The transition to green growth will bring about large-scale structural changes to the economy, and it is necessary to consider the full range of its potential consequences. The macroeconomic perspective is therefore essential, even though much of the empirical work focuses on microeconomic issues.

According to Mr. Bowen, the first major danger for labour markets is that environmental taxes and regulations could drive up employment costs and reduce competitiveness. The so-called Porter hypothesis shows that more stringent environmental regulations can in fact have an opposite effect. While the empirical evidence on the Porter hypothesis is quite varied and inconclusive, there is no evidence that the impacts will necessarily be adverse.

The relative size of employment losses is much larger in some sectors. In the field of climate change, the impact of carbon prices needs to be considered not least because it is often concentrated in geographical areas that have relatively few competing sources of demand. High-emission manufacturing industries also merit particular attention. Microeconomic work on the competitiveness effects of environmental regulation due to the re-location of industry, has found quite modest effects. However, there is a risk that if the current climate change negotiations are not fruitful, carbon leakage could occur on a significant level.

One major opportunity for labour markets in the transition to green growth is the potential increase in labour intensity. Renewable energy technologies and home retrofitting are generally more labour intensive. Whether this will have an impact on the economy as a whole is not quite clear, as it is not yet known which industries will be disadvantaged by the

environmental regulations. It is therefore necessary to determine the changes in the *net* number of jobs across the entire economy – that is, losses and gains, counting green jobs alone will not sufficient.

Furthermore, the available data does not take into account induced changes in employment throughout the supply chain. There is a parallel with the IT revolution where there has been a large impact on wholesale and retail operations across all goods and services, and a huge revolution in the entertainment industry. Going green is also likely to have such a wide impact, in particular with respect to the knowledge economy.

At the microeconomic level, net changes in employment depend also on the switch in individual industries to technologies that do less damage to the environment. Most of the studies looking at green growth often ignore many of these factors. They also assume that labour demand affects only the level of employment and not wages, and they assume that unemployment will increase unless real wages are flexible. However, a wider range of assumptions should be used to “stress test” the findings about net job creation. In particular, models need to take into account immigration and the scope of social security systems.

In his concluding remarks, Mr. Bowen pointed out three possible principal strategies. First, revenues from environmental regulation can be used to reduce taxes on labour, invest in infrastructure, and close budgetary gaps. Second, the welfare system can be used to target aid to the poorest households. Third, active labour market policies can promote the allocation of workers and the training necessary to facilitate smooth structural adjustments. This is particularly important for countries that rely on fossil fuel exports. In the long run, the general skills and education levels of workforces will need to be augmented to prepare them for a more knowledge-based economy. The costs of such structural change could be reduced if policy makers were to take a more consistent and long-term approach to planning.

2. Impact of Green Growth Policy on Employment: French Case Study

Mr. Frédéric Gonand (Associate Professor, Paris-Dauphine University) stated that the overall effect of green growth policies on *net* employment is *probably* not significant. A special issue of the *Energy Journal* in 2010 assessing the impact on GDP from low carbon transition policies to 2050 showed that all studies indicate a slightly negative effect of -0.06% per annum on GDP. In France, that would mean a loss of 10,000 net jobs per year on average, as compared to France’s current figure of 3 million unemployed. The French IMACLIM model shows a positive effect for green growth policies of $+0.09\%$ on GDP, with 8,700 jobs created per year.

Mr. Gonand further explained that the effect of green growth on employment can be influenced by tax policies, stating that the Paris-Dauphine University has been developing a model that makes it possible to measure the impact of green growth policies on inter-generational redistribution and on public spending. As such, recycling a carbon tax of 1% GDP through lower social contributions may add 0.25% to the GDP level in the long-term.

Finally, the effects of green growth policies on household behaviour may depend on age and demographics. A carbon tax that is fully recycled through lower social contributions has a positive effect on young workers and future generations; but the effect is negative for aged workers. On the other hand, higher public targets for renewables have a negative effect on younger generations. The policy implication is that a fully recycled carbon tax may offset most of the detrimental effects associated with an increased target for renewables.

In conclusion, therefore, the net effect of green growth policies on employment is probably small. That effect can be influenced by tax policies and by demographics through the inter-generational distribution effect.

3. The Local Challenge: Flexible Local Employment and Training Systems for Green Growth

Ms. Nathalie Cliquot (Policy Analyst, Local Economic and Employment Development Division (LEED), Centre for Entrepreneurship, SMEs and Local Development, OECD) presented the challenges of green growth policies that are faced at the *local* level as opposed to their macroeconomic effects.

Ms. Cliquot pointed out that LEED has a number of green growth projects underway, based on case studies from around the world, such as: Improving the Effectiveness of Green Local Development; Measuring the Potential of Green Growth; and Skills for Greener Jobs in a Local Labour Market Context.

She further pointed out that it is known that green growth policies have an impact at the local level, provided that local or regional authorities are willing to take the lead on the green transition. However, the challenge remains in setting up the appropriate governance structures to anchor that leadership. It is also necessary to develop appropriate indicators for measuring local green growth, as this can also help to trigger local action and motivate policy makers. In terms of investments and resources, the up-front costs for initiating change are high and the short-term rewards are limited. As such, she questioned how local authorities could help boost the adaptation of existing industries and how they can ensure that workers are not left behind.

In terms of the skills needed for greener growth, the number of *uniquely* green skills is quite limited. However, there is a need for mainstreaming the green growth approach throughout education programmes and curricula. In particular, there is a need for transferable skills for workers moving from sectors in decline to new emerging niches, as well as a significant need for change in management and communication skills.

Calling for an integrated approach to skills, Ms. Cliquot stated that successful integrated approaches can make a real difference at the local level and stressed that employment and entrepreneurship – both on the demand and supply side are necessary. She further noted that several examples of such integrated approaches are already underway, such as a Belgian training programme for new job profiles developed in conjunction with business and industry sectors; an Irish programme on local supply chain dialogues; the Californian *Pathways Out of Poverty* programme; or the creation of green tech clusters such as the *Bio Base Europe* cluster between Belgium and the Netherlands.

In her concluding remarks, she pointed out that in order to boost local leadership for green growth, flexibility in adapting national programmes to local labour market conditions, as well as disaggregating data on jobs and skills to the level of local labour markets is necessary in order to allow for local policies to be developed through an evidence-based approach.

Plenary Discussion (1/2)

Discussion points:

- *To what extent will green growth policies generate structural adjustment pressures on labour markets? How can countries best manage them?*

- *What are the main opportunities and risks ahead e.g. skills gaps, workforce inequalities, challenging labour market transitions and new sources of jobs growth?*
- *How can the labour market actions of different levels of government, unions and employers best be co-ordinated to address these challenges and opportunities, especially taking into account that jobs will not automatically be created in the same places they are lost?*

Mr. Peter Poschen (ILO) opened the discussions by noting that certain jobs have positive environmental externalities, and existing technologies cannot be used in the absence of skilled workers. A 2011 study carried out in 21 countries found that the skills issue was important both for the green sector and the brown sector. The **greening of brown sectors** in fact reduces the cost of the energy transition. The share of lower skilled workers is actually higher in carbon intensive industries than it is in other sectors. There are few entirely new occupations emerging but there is a pervasive change in job profiles and a change in relative demand. In France, for example, half of all building activity shifted from new buildings to renovation of existing buildings in just five years.

Mr. Stanislav Shmelev (Environment Europe) referred to his 2010 paper based on an input-output analysis, which showed that education and healthcare could be considered as the top sustainability sectors in the UK. Half of the world's biodiversity has been lost in the last 40 years, there are no signs of CO₂ levels going down, plastic waste fills the oceans – all of this suggests the need for a radical rethink or **paradigm shift** in economic thinking in particular. He further announced that the Winter School in Ecological Economics held in Oxford on 4-8 January 2015 with the aim of moving these issues forward at a much faster pace.

Ms. Annabella Rosemberg (TUAC) asked for further details of the **quality of jobs created** in the South African programmes. She also asked whether brown regions were also thinking green when addressing the local dimension of green growth. She further stated that TUAC is quite sceptical of general equilibrium (GE) models, which are unable to capture the *qualitative* aspects of jobs or the gender dimension, and that it is therefore difficult to see how they can guide political decision-making. Thirdly, Ms. Rosemberg pointed out that green growth is not occurring in a vacuum but in a context of deep inequalities, and unless green growth policies can *improve* the quality of life, they will face significant social opposition even though they do in fact protect the environment.

A representative from the French Development Agency asked whether the green option was a demand option rather than a supply option – one that reduced consumption or at least wastage, noting that it is difficult to see how that could create employment. Furthermore, it was stated that the net effect of greening would be small (10,000 job creations compared to 3 million unemployed in France), and asked whether the first step in green growth policies should be to address the issue of unemployment.

Mr. Georg Schaeffer (GIZ) asked for details of the funding mechanisms on which the “Working For” programmes were based.

Mr. Dirk Van Der Stede (Flanders Water Knowledge Centre) differentiated between “greening the economy” and the “green economy”, in particular as it affects water. Going forward, rational **water use and re-use** will be necessary, and that requires having an integrated approach.

Ms. Ulrike Lehr (GWS Germany) referred to the German experience of installing heat pumps in the 1980s. As the technicians were not properly trained, the initiative failed completely and a whole new programme had to be implemented. He further noted that eco taxes should not be

seen as growth policies, as they are *green* policies. He also questioned whether people moving from brown jobs to green jobs would actually have better and more decent jobs.

Ms. Leida Rijnhout (European Environmental Bureau) stated that she preferred the term “green economy” to the term “green growth”. Social innovation also plays an important role in achieving the green economy.

Mr. Frédéric Gonand agreed that general equilibrium models (GE) did not help in understanding the effect of green growth on general equality. Nor did they help in understanding the impact on skills and training, or on the local economy. However, general equilibrium models help avoid spending money on policies that do not work.

A participant added that it is necessary to think outside the box, and if green growth policies have only a small impact on employment, perhaps it will be necessary to have a separate policy on the unemployed. The participant further questioned if a single strategy would be able to address climate change *and* unemployment.

Ms. Nathalie Cliquot referred to the question of whether “brown” regions were beginning to think green, and explained that the OECD does not rank regions according to whether they are brown or green. However, the OECD is developing green growth indicators that consider not only climate but many other aspects. In that sense, many regions are interested in greening. She further noted that improving job quality is a critical part of the equation, as is the transferability of skills for the long-term. Finally, regarding business models, she replied that promoting an integrated approach can help encourage technical *and* social innovation.

Mr. Alex Bowen agreed with Mr. **Frédéric Gonand’s** comments on the potential utility of general equilibrium models, stating that these models have to be adjusted to the particular question being addressed. Also, the term “green growth” reflects the evidence that GDP growth has been effective in lifting people out of poverty in the developing world. Climate change can in fact be resolved with limited impact on GDP growth. However, there were many other ecological problems that were much more intractable.

Mr. Guy Preston expressed his concern that green growth was being equated only with climate change when it actually involved many other aspects. He also noted a failure to consider the opportunity costs of options when making informed choices. Also, when referring to supply versus demand, the demand-side management option was found to be 42 times more effective than building a new coal fired power station and also pointed out that demand-side management will create the most jobs. Concerning the question of job quality, the expanded public works programme was launched in the South African context where there is a 26% unemployment rate, and only 3 out of 10 school graduates find jobs. The programme has a significant focus on training and creating sustainable jobs. This is reflected in the fact that there were 5,000 applicants for 20 fire fighter positions alone.

For **Mr. John Atherton**, all national governments are engaged in the battle for quality jobs, low rates of unemployment, and good living standards for citizens. The focus is therefore not on the net impact of green growth but on the specifics – in particular, how it impacts on local populations. Areas that have a low skills-equilibrium require a specific policy solution in order to adapt to change. He further stated that if “green” is seen as a competitive advantage, LEED literature can be of assistance as it is focused on having a strong and vibrant labour market that can respond to a variety of risks. LEED is therefore firmly concerned with unemployment, not only in terms of green growth. The challenge is to provide pragmatic, practical advice on green growth in the midst of the global battle for quality jobs.

Panel Discussion (2/2)

4. The Investment Challenge: Investing in Alternative Job Opportunities

Mr. Michael Renner (Senior Researcher, Worldwatch Institute) focused on renewable energy, drawing on the 2014 report, *Renewable Energy Investments*. Renewable energy investments experienced a 7-fold rise from 2004 to 2011, and then dropped off again by 24%. That decline was due to the following four factors:

- First, regional shifts mainly due to Chinese investments increasing dramatically and European investments dropping sharply.
- Second, a strong decline in the cost of many of these technologies, in particular photovoltaic, solar and wind.
- Third, market turbulence, again as a result of the ongoing regional shift from Europe and North America to Asia in both manufacturing and installations. International competition has also grown in this field with a large over-capacity on the production side. Trade friction has increased between renewable energy producers, and this had even led to a call for punitive trade measures.
- Fourth, policy uncertainty. In the past decade, the number of countries implementing policies in support of renewable energies has tripled to about 137. Such policies include feed-in tariffs, RPS/quota policies, and auction policies – all of which have rapidly expanded around the world.

He further stated that political stability is critical to avoiding excessive market cycles. Uncertainties and reversals were driven by the economic crisis: in Southern Europe, austerity plans led to abrupt changes in policies; in the US, the production tax credit, which was instrumental in wind development, has also gone through tremendous fluctuations.

In terms of trade and investment policies, it should be noted that many countries import renewable energy equipment. However, knowledge spill over is more likely to occur if the domestic supply chain is built up. Finally, there is the issue of domestic content regulations, which are aimed at developing national production. It is not yet known whether the WTO will strike down such regulations.

For all the turbulence that has occurred in this field, the number of jobs in the renewable energy sector has increased fairly consistently. Nevertheless, more research is required on the quality of these jobs, wage levels, and the role of trade unions.

5. Structure of Job Creation: Indian Green Sector Analysis

Mrs. Anushree Sinha (Senior Fellow, National Council of Applied Economic Research) presented a Study undertaken for the International Labour Organisation on the impact of green growth on the *types* of jobs created. She indicated that in India, there is a move towards a greener development path based on energy efficient technologies and sustainable practices. Such a shift in production processes has major consequences on development outcomes, with different impacts on men and women, and different impacts on informal (less secure) jobs. The Study aimed to trace those outcomes and despite recent developments, the share of women in the Indian workforce remains very low compared to men: women make up 25% of the working population, and only 1.8% of them are formal female workers.

In terms of the wind energy sector, in particular, in September 2014, wind energy produced 21,000 MW or approximately 30% of all renewable energy in India. Input-Output (IO)

multipliers were used to measure the total impact of changes in sectoral demand on the entire economy due to any policy change or external shock. The Study showed that the employment multipliers for informal workers were much higher than for formal workers in both green and non-green sectors. The employment multipliers were much greater for male workers in all sectors. She further noted that it is, however, necessary to distinguish between the green sectors and green jobs.

In conclusion, Ms. Sinha pointed out that in the short-term; investing in the green sector involves major investments in the relevant infrastructure (such as wind turbines). In the longer-term, however, those investments are very cost-effective. The existence of high levels of informality and male dominance in the Indian workplace needs to be addressed. The study highlights the need for policy considerations when it comes to employment structures in various sectors in the economy and not only in the green sectors.

6. The Challenge of Creating an Integrated Approach to Green Growth

Mr. Randall Eberts (President, WE Upjohn Institute for Employment Research, US) focused on the challenge of implementing an integrated approach at the local level, drawing on the example from Michigan's local green initiatives, in particular the *Detroit Area Green Sector Skills Alliance*. The Alliance was created by the Detroit Regional Workforce Fund to form long-term partnerships between employers and service providers and to engage community organising efforts. It focuses on meeting employer needs and creating job opportunities/career pathways for workers. It does so in areas such as energy retrofitting (private and commercial), deconstruction, and transformation of brown fields into green fields.

There are 7 critical steps in developing such an integrated approach:

1. Recognise the need for the region to develop a green economy.
2. Involve all parties in defining and setting the objectives towards a green regional economy.
3. Develop a workable definition of a regional green economy and green jobs.
4. Coordination and alignment between businesses, educational institutions, labour/environmental/faith/community groups.
5. Strong awareness of the challenges and opportunities of the local green economy.
6. Create or align needed capacities.
7. Monitor the progress of the green economy and green jobs.

Mr. Eberts concluded that the challenges faced include the fact that the concept of the green economy is still not well defined, as it tends to be a public relations exercise rather than a real transformation of existing sectors. Furthermore, green markets are still too small and fragile, and require government support to develop. Workforce development is out of sync with economic development and skills do not match jobs and vice versa. There is a lack of adequate funding, and the businesses themselves are not engaged. Finally, there is a paucity of appropriate statistics in this area.

Plenary Discussion (2/2)

Mr. Paolo Soprano (Italian Ministry of the Environment, Land and Sea) opened the discussion by highlighting a July 2014 meeting held in Milan where, for the first time ever, environment and labour ministers came together to discuss the potential of the green economy. Key findings from the meeting included, firstly, the need to develop new competencies and skills; secondly, the transition towards a green economy should also include brown jobs; thirdly, the

transition will reinforce the need for a workable model that combines labour mobility with sufficient support for job losses; fourthly, regular reporting on green jobs to be part of the European Annual Jobs Survey is particularly important and finally, environmental taxes and market-based instruments should be considered as valuable tools for (a) environmentally favourable policies, and (b) in support of job creation.

Mr. Stefan Ulrich Speck (European Environment Agency) pointed to the shift in Europe from the manufacturing industry to service sectors, which has significant social implications. Recent data show that the shift has resulted in a drop in wages. It is also necessary to consider the ageing population, and the use to be made of increased revenues resulting from regulatory changes. Overall, the future will be very challenging. He noted that the general equilibrium model has been referred to but there are many other macroeconomic models available that can also be used.

Mr. Jean Chateau (OECD) referred to work carried out in the Environment Directorate on CGE model simulations in order to assess the macroeconomic impact of both climate change policies and green growth policies. That work concluded that the impact of these policies on labour markets is quite limited, at least in OECD economies. The net impact of these policies on net employment is also quite limited, and any positive effects are linked to general macroeconomic tools rather than specific green growth policies. In terms of the skill compositions in each sector, Mr. Chateau noted that skills do matter and it is necessary to carefully look at the specificities of each sector. Going forward, 3 key questions remain concerning the losers and winners in the transition; whether the implementation of green growth policies leads to a skills shortage, and whether the specific impact of the many different tools and instruments are available.

A participant highlighted the fact that the most important aspects of the transition lie outside the box, and that it would be valuable to be able to present the modelling results together with the figures for resource use, emissions, waste streams, and employment. Without taking all these dimensions together, it is not possible to have a full picture of all the trade-offs involved. Mr. Renner advised that World Watch's 2013 *State of World Report* provides such an overview of the different dimensions involved.

Mr. Mark Douglas pointed out that the definitions of "green growth" and "green jobs" are often not applied appropriately, noting that qualifying a job in the chemical industry that is concerned with water-based paint as opposed to oil-based paint might be considered as a job that contributes to green growth but it may not be considered as a green job.

A participant noted that Detroit was home to the major car manufacturers, and also had a significant presence of the IT industry, and wondered how these different industries were being pulled into the green workforce. Much was said about the *supply* of **green jobs** and the appropriate training, but questioned where the actual *demand* for these jobs would be.

A participant asked for further details of how the input-output table for informal jobs was developed.

Mr. Jean Chateau stated that a green job appears when carbon taxation is introduced. According with **Mr. Renner**, it is necessary to look at each individual sector: what is not green in that sector, and what could be done to green it. In this context, the situation is not black or white, but there are shades of green. It is also necessary to have a set of thresholds as to what would make an activity less impactful on the environment. For **Mr. Atherton**, it is extraordinarily difficult to develop such definitions, and identified it as a knowledge gap.

Mr. Randall Eberts advised there were many different definitions of green jobs at the local level in the US. As to the **Detroit car manufacturers**, they are not specifically involved in the green growth initiative but are working at their own level on concepts such as hybrid cars, fuel efficiency, etc. The biggest challenge, he noted, is to get the green sector moving forward without government subsidies.

Mrs. Anushree Sinha explained that people working in unregistered enterprises were, by definition, informal and not green. The information used in the input-output table was drawn from a nation-wide survey, and involved a large **data mining** exercise.

Session 2 Wrap Up

Ms. Ann Van den Cruyce (Head, Division of Employment, Department of Work and Social Economy, Flemish Government, LEED Vice-Chair) began by stating that she takes a pragmatic approach to labour market policy. From both the macroeconomic and microeconomic perspective, the impacts of greening policies are not convincing and depend on country- and industry-specific conditions. Tax policy can also have a positive but limited impact. Labour markets and skills policies face significant challenges, in particular with the shift from lower qualified jobs to more knowledge-based jobs.

She further stated that the story behind the macroeconomic perspective is a human story, and the impacts at the local level vary. Measurement itself can act as a catalyst in this process, and the main challenge from a labour market point of view is the transition in terms of skills. This is not entirely about new jobs but about an *adaptation* of existing skills. STEM education will play a role, as will the softer skills (management, communication, and so on).

Concerning skills, Ms. Van der Cruyce stressed that it is not only about the supply side, but that the demand-side is also important, and as such, there is a need for partnerships at the local level which requires breaking out of existing silos.

She concluded by noting that the challenges that need to be addressed include the creation of *decent* jobs. It is also necessary to make efforts in the area of social innovation and new business models, and to address social issues such as the informal economy or the underrepresentation of certain workers. All of which highlights the need for an integrated, holistic approach, ensuring that policies are stable and consistent.

Day 2

Plenary Session

Addressing the Social Implications of Green Growth: Policy Responses and Solutions

Overview of Day 1

Ms. Nathalie Girouard (Coordinator, Green Growth and Sustainable Development, OECD) provided her key messages from the Day 1 discussions. Concerning social protection and redistribution policies; an overarching conclusion was that much more qualitative knowledge was necessary on the household impacts of green growth policies. Better links with social policy were also identified such as the fact that inclusive green growth will require social ministries to go beyond revenue-envelope thinking. Furthermore, there is a need to better situate and monetise the household benefits of green growth in language that speaks to the finance ministries, and noted that the OECD's well-being framework could be of potential value in this area.

With respect to labour markets, Ms. Girouard stated that difficulties remain in order to articulate the full range of labour market policy responses required to address green growth in a structured and coherent narrative. Important gaps exist in the modelling work; integrating a skills dimension into CGE models should therefore be high on the research agenda. CGE models are important in identifying gaps but are not the only tools available. Beyond the macroeconomic perspective, more work is required on impacts at the local level.

Scene Setting

1. The Trade Union Perspective

Ms. Annabella Rosemberg (Policy Officer, TUAC) summarised the trade union perspective on the solutions available to moving the green growth agenda forward. She began with a question of semantics: the use of terms such as green growth, the green economy, or sustainable development matters less than a certain number of principles such as the rights of citizens, the precautionary principle, the polluter pays principle, and so on.

She also stated that the trade union movement does not aim to slow down this process but to ensure that the appropriate social support is made available. As such, it requires both time and resources; and when it comes to the available solutions, 5 key points should be considered as follows:

1. It is necessary to have clear goals to ensure that investments are leading in the right direction. That vision is lacking today, especially with respect to labour market policies.
2. Anticipation is critical. By being clear about the desired objectives, it is possible to anticipate potential impacts on sectors, regions, industries, and the local level. It is also important to have the right information; today the necessary qualitative assessment, modelling and scenario-making is still lacking.
3. Active labour market policies are needed in order to deepen the knowledge of the issues faced.
4. Experience shows that social dialogue, when used to identify the difficulties faced by certain sectors, has worked well.
5. Local economic diversification is important. A proactive approach is needed for regions that are currently dependent on polluting sectors. Those regions have to start thinking about the transformation of their economies.

Ms. Rosemberg concluded that the moment for thinking about justice and about the transition is *now*. The transition is quite an exceptional one in that it is clearly policy-driven. The key message from the trade union perspective is that it is necessary to anticipate and act accordingly.

2. The Business Perspective

Mr. Russel Mills (Global Director of Energy and Climate Change Policy, Dow Chemical Company) provided a business perspective, based on 3 main points: communications, employment/income/skills issues, and investments. He focused on the manufacturing and energy industries, which are key enablers of support.

Concerning communications, he noted, it is important to speak the same language. The business sector tends to speak a very different language from policy makers. The business sector is focused on growth and it is focused on figures; it does not think in terms of colours (green, brown, and so on) but in terms of long-term added value. The biggest challenge for business is short-termism, and this is an area where business and policy makers need to cooperate more closely together. In the last decade, the chemicals industry created approximately 600,000 direct jobs, and it is important for all sectors to become greener and more efficient. That requires additional skills, which should go hand in hand with additional income.

As an example, he mentioned that the chemical industry welcomes the increased focus on the social aspects of the transition, and the driver to shift to modern energy in a short time span. As such, a smart start would be to drive to low carbon technologies in Africa, where 600,000 premature deaths per year are due to the use of charcoal stoves.

When communicating about green growth, he stated, it is necessary to talk about sectoral issues, global issues and local issues. Overall, it is necessary to talk *with* each other instead of *at* each other.

When referring to the employment/income/skills issues, the level of unemployment and the level of incomes is a concern, not only in terms of purchasing power by the worker/consumer, but there is always a balance to be found between being competitive and the amount of added value each job creates. When it comes to skills, it is important to focus on vocational and educational training, and on STEM skills. Despite the high global levels of unemployment, industry suffers from significant skills shortages. This is also an area where innovation should be strongly encouraged.

Concerning investing for growth, Mr. Mills noted that much more progress could be made by focusing on benefits first and applying the burdens later. For example, a family suffering from fuel poverty should be helped by having their home insulated before adding a cost to its energy bill through a carbon tax. The transition to a low carbon economy is strongly driven by the need for up-front investments, and, in many cases, market competition will drive progress much faster than regulations.

In conclusion, by demonstrating the case for increased long-term added value a virtuous circle would be created: an increase in investments will, in turn, add further value to society as a whole.

Parallel Sessions

Active Labour Market and Skills Policies for Green Growth: Joint Session with the ILO

Mr. Peter Poschen (Director, Enterprises Department, ILO) set out the framework and goals of Parallel Session 1 by noting that not enough attention had been given to the social and labour market dimensions of green growth. The context faced today throughout the world includes widespread unemployment, working poverty, rising inequality, and massive social exclusion. In 2007, the US public's primary concerns were employment and the environment, in equal measure. After the crisis broke, a 40% gap appeared between employment and the environment as a public policy concern. Today, as the economy is recovering, the environment is again rising as a concern. This suggests that, if it is not possible to provide a clear convincing story about the connection between jobs and green growth, the story will not be heard.

Two recent ILO reports have highlighted 3 main opportunities to be gained by greening the economy: job creation; improving the quality of existing jobs; and advancing social inclusion. The key global messages to emerge from ILO discussions on sustainable development include the fact that environmental sustainability is not an *option* for the labour market – it is a *must*. At the same time, this has to be a just and well-managed transition.

The proposition put forward today is that the policies themselves will determine the outcomes – for the environment, for labour markets and for social inclusion. Labour markets can become drivers of green growth, as was shown in the Brazilian and South African examples of Day 1. Mr. Poschen also mentioned that the German energy transition programme has driven down the prices of renewables dramatically. Its energy renovation programme has mobilised €120 billion for energy efficient renovations, and was initially motivated by a jobs crisis in the sector, illustrating how labour markets and their concerns can be used as potential drivers.

Mr. Poschen indicated that the Session should note that coherence was required among environmental, economic and social policies, including policy instruments such as eco taxes. He also noted that it would be of value to focus on SMEs as an important group for job creation and job retention. Discussions should also focus on skills, the anticipation of structural change, and on active labour market policy. Social dialogue runs through all of these topics.

Provided the above, it was necessary to separate out the direct and indirect effects on labour markets, noting that trade will have a significant impact on national employment generation, and, as such, it is also important to take into account the budget and income effects resulting from green growth policies..

The session broke into 4 sub-groups, which aimed at delivering for their selected topics: (a) a key policy message, (b) identify a knowledge gap, and (c) identify a priority research proposal for future work.

1. Understanding Complex Labour Market Interactions

Ms. Ulrike Lehr (GWS Germany) focused on energy efficiency as an important contributor to labour creation. In particular, she questioned whether green growth is achieving more and better jobs. “Green jobs” have been defined statistically, and will be increased by the promotion of green sectors. “Green growth” extends to all sectors, and the employment effects of green growth will be greater than green jobs alone. For example, the growth of the wind industry led to the creation of green jobs, but it also had an impact on all related industries, including brown industries such as steel.

Work undertaken by GWS has shown that the situation is quite different in European countries where energy demand equals energy supply, and renewables are progressively replacing fossil fuels. This means that there are job losses in the fossil fuel industries and job gains in the renewables area. In other regions of the world, demand is increasing and often unmet to date. As such, renewable energies represent an *addition* to and not a replacement of fossil fuels.

The situation with respect to energy efficiency is slightly different, she added, as efficiency renders supply partly obsolete. Nevertheless, efficiency is the cheapest source of energy and the least expensive source of employment creating options available today.

Finally, two concrete examples: the German *Energiewende* has led to better growth and more jobs; and the Tunisian solar plan has led to additional employment and SME creation.

2. How Labour Market Policies can be Conducive to Green Growth

Mr. Georg Schaefer (GIZ Germany) focused on the fact that green growth policies have to be designed and implemented in an employment oriented manner. They also have to be supplemented by active employment promotion measures.

The standard instruments for promoting green growth include environmental rules and regulations, market based instruments (eco taxes, emissions trading schemes), market supporting instruments (feed-in tariffs, direct subsidies), and sustainable infrastructure development. They can be applied in an employed oriented manner by implementing them in a coherent way with the right time scale and can help increase innovation and competitiveness, as well as stimulate the development of new domestic and export markets. They can also help create additional jobs, as outlined in the so-called Porter hypothesis.

The use of higher energy prices through eco taxes can have a mixed impact on economic growth and employment. However, if the higher energy taxes are combined with lower labour taxes and social contributions and/or increased public investment, they can have a positive effect. Ecological subsidies, if introduced at the right time, can provide an initial spark for the introduction of new technologies, products and services, thus creating additional jobs. However, the total costs have to be limited and a phasing-out strategy must be envisaged.

Finally, Mr. Schaefer concluded that countries are also well-advised to undertake active employment promotion measures, promoting labour demand, improving labour supply, and facilitating the transfer of labour from brown to green sectors. This must be done as part of an employment-oriented economic policy framework.

3. Job Quality in Green Jobs

Ms. Janet Asherson (International Organisation of Employers) proposed to bring the discussion from the conference room down to enterprise level – to the Board room and the shop floor,

stressing that the terms such as green economy”, “green jobs” and “green products” mean many different things to many different people. Managing risk in these complex areas, diverse work places, and rapidly changing situations is key to providing quality jobs and decent work. A common methodology is required to enable the management of risk in order to obtain the best advantages from investments in the workplace.

The risk assessment approach can play a role here. With the development of the green economy, it has been seen that very few *new* hazards are emerging. However, traditional hazards are appearing in new places and the workforce in some of these green economy jobs may be unfamiliar with the old hazards. For example, people working in elevated heights in wind farms face similar risks to those working on pylons in oil distribution systems, or on scaffolds. To address that issue, it is necessary to share information across sectors, and learn from the past. A system must be set up to preserve corporate memory, and both employees and employers have to move out of their silos in working together to address the risks.

In addition, Ms. Asherson pointed out to the trend towards multiple skills for employees. Similarly, employers are called on to identify the best investments for the new technologies as well as to be knowledgeable in environmental matters.

4. Skills and Training Policies for Green Jobs

Mr. Youssef Naouar (Tunisian Ministry of Vocational Training and Employment) considered the following two dimensions: the general context for the emergence of green jobs, and the Tunisian example of green job creation. The emergence of green jobs has led to new demands on the business and societal levels through the acquisition of the fundamental skills needed for the transition towards a green economy, mainly through training modules based on conversion, adaptation, etc. and through the creation of new training programmes that specifically focus on green skills.

Regarding renewable energies, Mr. Naouar noted that the Tunisian experience has been quite successful with a number of newly identified skills and jobs, as well as conversions from traditional jobs. This was primarily achieved through complementary training programmes in photovoltaic energy. It also included new training programmes on specific and emerging job profiles. A number of findings emerged from that experience, primarily that the younger population in Tunisia considers green jobs to be “dirty” jobs; secondly, that there was a preponderance of complementary training programmes that aimed at very specific skills; thirdly, it was necessary to revise all the programmes and even the standards that are applicable to training – in particular, it was necessary to improve the skills of the trainers themselves. Finally, it was necessary to involve other parties in the design and implementation of training programmes, notably employers, trade unions and civil society.

In January 2011, Tunisia launched a national strategy for the green economy. This was done in parallel with actions to fight unemployment. Two studies were carried out on job creation and on the improvement of youth employability within the green economy. Work is now underway on the basis of the recommendations of those two studies. A Platform for Green Jobs has been launched in one Tunisian region to provide employment for young people in the green sector and ensure that the companies in that area have the skilled employees they need. The Platform also facilitates the process for the creation of micro-enterprises in this area.

[Participants broke up into the 4 sub-groups for detailed discussions on their topics. The meeting resumed for a presentation by each sub-group leader of the results of those discussions.]

5. Feedback from Sub-Group Discussions

Ms. Ulrike Lehr summarised the findings of sub-group 1, as follows:

- Data was identified as the main knowledge gap. It is necessary to have more data on the benefits (including the health benefits) of energy efficiency for job creation; on skills and sustainability; and on sector-specific resource consumption. One way of obtaining such data could be through integrated reporting from the respective industries.
- More research is needed on the path that developing countries can choose to achieve growth. Such research will also be of interest for industrialised countries, as it will have an impact on international trade.
- In terms of the policy message, both developing and industrialised countries require skills support, awareness-raising of green growth among the public, and a mainstreaming of the green economy into day-to-day lives.

Mr. Georg Schaefer summarised the findings of sub-group 2:

- The main policy message was to green the economy in order (a) to save existing jobs, and (b) create new jobs. This requires policy coherence and a realistic time scale.
- The main knowledge gap identified was the net employment impact of green growth, both in quantitative and qualitative terms. There was still little hard empirical evidence in this area.
- Research priorities included the design of an integrated approach to the promotion of green employment, with a focus on green businesses, green skills, and green labour markets.

Ms. Janet Asherson summarised the findings of sub-group 3:

- The main policy message would depend on the target of the policy measures. First, the message needs to be sent to international thought leaders and donors through the UN family of agencies, and the SDG process. Second, the policy message needs to be disseminated at the national/regional level through a coordinated effort across government departments (labour, environment, education and skills, enterprise, social protection and health). At all levels it is necessary to facilitate cross-sectoral knowledge and skills transfer, while also involving business and worker representation, and civil society at large. However, taking all of these issues in one sole project is not practical, and therefore a broken-down process would prove to be more effective.
- Inadequate evidence of the short and long-term job benefits to be gained from green growth policies, both in quantitative and qualitative terms was identified as the main knowledge gaps. Also, if and how green growth policy measures are being used by enterprises and workers should be further investigated. .
- Research priorities included specific case studies of success stories that are transferrable to other sectors. It is necessary to identify the policy outcomes that are linked to improved job quality and enterprise growth. Finally, an investigation of the links to national and international migration policies and activities would be of value.

Mr. Youssef Naouar summarised the findings of sub-group 4:

- The policy message was that it is necessary to consider green skills within an overall training policy. It is also necessary to consider the role of behavioural changes, in

particular with respect to green management practices. Finally, it was necessary to develop a new paradigm in which green skills were considered as transversal skills.

- In terms of knowledge gaps, a lack of information regarding job profiles and qualifications was identified and a new nomenclature is also needed for these new green jobs.
- Research priorities included the need to promote the circular economy, which takes into account all of the different dimensions of resources policy (natural, capital and human).

Social Protection and Redistribution Policies for Green Growth

Mr. Colin Brown (OECD Committee on Fiscal Affairs) explained that Parallel Session 2 would focus on a number of questions.

First, why have environmental taxes at all? Environmental taxes aim to put human activity onto an environmentally sustainable footing while maintaining – and improving – living standards. It is important to avoid eroding the stock of environmental capital because that is what keeps humans alive and allows them to benefit from a good living standard. Environmental taxes also aim to make the price of consumption goods equal to their marginal social cost, which is calculated by adding the economic cost of production to the social cost of environmental degradation. Other policy instruments, such as standards, work by regulating activity but they also impose their own costs.

Second, why be concerned about social protection given that the primary objective is to ensure that the environment is sustainable? Society is concerned with fairness – ensuring that the burden of adjustment falls on those most able to bear it rather than the least well off. If a tax is perceived as being unfair, it will be much more difficult to achieve its implementation. If the political economy issues are not dealt with, reforms will simply not go through. There are a number of different dimensions of equity: vertical and horizontal, intergenerational, international, and so on. Having effective social protection could also help improve the effectiveness of the environmental measures. A well-designed compensation may help the transition to a cleaner, greener society.

Finally, Mr. Brown stated that distributional analysis is a tool that can be used to identify who is impacted, and the Session will also explore the additional tools and data that are needed to “sell” policy change to the public.

[Participants broke up into the 4 sub-groups for detailed discussions on their topics. Feed-back was provided by sub-group leaders in the Closing Session below.]

Closing Session

Chair: Simon Upton
Director, Environment Directorate, OECD

Outcomes of the Parallel Sessions

1. Active Labour Market and Skills Policies for Green Growth: Joint Session with the ILO

Mr. Peter Poschen summarised the outcomes of Parallel Session 1, and its 4 sub-groups:

- Assessment
 - Policy message: for developing and industrialised countries, there is a need to focus on skills and raise public awareness to support policy change. As such, “going green” becomes a mainstream of broad economic development.
 - Knowledge gaps: understanding the interactions is complicated due to the lack of data on energy efficiency and jobs, health benefits, skills changes, and sector specific resource consumption. Integrated reporting across industries could be a solution.
 - Research priority: exploring how far developing countries could go in decoupling growth from the use of resources. That will determine the world’s collective future in terms of resource use, emissions, trade opportunities, and economic interaction between regions.
- Active labour market policies
 - Policy message: going green is necessary to save existing and create new jobs. Policy coherence is necessary on a realistic time scale for the transition.
 - Knowledge gaps: much forward-looking analysis is available but there is little empirical evidence on *net* employment impacts and quality of jobs created.
 - Research priority: to develop an integrated approach to more and better jobs in greener economies. Such an approach would link green business development, green skills and green labour market policies.
- Job quality
 - Policy message: at the international level, it is important that the green narrative enters the SDG discussions, and in parallel, the case needs to be made to national governments. Involving a broad range of stakeholders (trade unions, employer organisations, and civil society) is vital to social inclusion.
 - Knowledge gaps: too little is known about how green growth can be integrated into enterprises in the short- and long-term.
 - Research priority: a focus on transferable success stories, with particular emphasis on how policy design helps facilitate certain outcomes in enterprises and in the labour market.
- Skills
 - Policy message: it is necessary to embed green competencies for managers and employees in the paradigm of how businesses operate. That requires being clear about what those competencies are, and how behavioural changes can be driven both for employers and employees.
 - Knowledge gaps: there is a lack of basic labour market information on the relevant aspects of employment: quantity, quality, sectoral, informal, formal

and so on. There is also a lack of understanding of occupational profiles, and how those profiles will change in the future.

- Research priority: there should be a focus on pathways to a circular economy that is based on an assessment of all resources used (natural, capital and human).

Mr. Simon Upton agreed that the knowledge gaps were well-known. However, the major obstacle remains the lack of will to fill those gaps. Mr. Upton further stated that the OECD is preparing a major policy report for the next Ministerial Meeting on policy alignment for a low-carbon economy. Some of the gaps that were identified are crucial to a full understanding of the need for policy alignment, and that will only occur if social ministries work alongside economics ministries. The scale of the transformation needed is much greater than imagined, and it will only be achieved if all of those gaps are filled.

2. Social Protection and Redistribution Policies for Green Growth

Mr. Colin Brown summarised the outcomes of Parallel Session 2, and its 4 sub-groups:

- Distributional impact of Korean electricity sector reforms
 - Policy message: it is necessary to identify the issue to be addressed and obtain public acceptance on the need for a reform.
 - Knowledge gaps: the distributional impact of the reforms needs to be specified.
 - Research priority: the distributional impact of such reforms on future investments and on the power mix.
- Social impacts of green growth reforms
 - Policy message: reforms may be more successful if the benefits of social compensation are distributed *before* taxes are imposed.
 - Knowledge gaps: need to identify how to change business models and how to encourage behavioural change in consumption patterns as well as how to achieve transparency in the costs and benefits of change.
 - Research priority: a number of topics were identified including what are the fair, sharing policies that could be implemented within economies; what are the macroeconomic impacts of green taxation; and what are the distributional impacts of these policies *between* countries.
- Potential reform strategies
 - Policy message: it is crucial to have one instrument per policy, and ensure that carbon tax revenues are not overspent.
 - Knowledge gaps: the impacts on households and how those impacts can be compensated.
 - Research priority: what are the impacts on households and what are the alternative tax bases that could be used (for example, land tax, resource tax)?
- Broad tax reform strategies
 - Policy message: it is necessary to replace a narrow definition of growth (GDP growth) with a much broader definition of sustainable and inclusive growth. A well-being framework may be a better measure of social and economic *progress* in society.
 - Knowledge gaps: the linkage between tax policy and sustainable and inclusive growth, more specifically, how can tax policy be used as an instrument to advance that agenda?

- Research priority: alternative tax bases, resource taxation, and non-distorting rent taxes. What are the impacts of shifting tax bases from labour to other bases?

Mr. Simon Upton noted that tax represents another useful crossover point in this debate. **Ms. Nathalie Girouard, who led the organisation of this conference,** was congratulated on an excellent initiative that focused the parallel sessions on key messages, knowledge gaps, and future research priorities, which led to much more productive outcomes for discussions.

Closing Remarks

Mr. Rintaro Tamaki (Deputy Secretary-General, OECD) stated that as per his recent message to ASEAN countries on the findings of the OECD report *Towards Green Growth in Southeast Asia*, climate change would affect this region the hardest. It is therefore crucial for environmental considerations to be incorporated into the next round of national development plans.

The OECD is concerned with policy, which is ultimately concerned with people's lives. Green growth policies involve significant social challenges and raise important questions about inclusiveness. The strength of this Forum, he stated, is that it brings together experts from the diverse disciplines that are relevant to green growth. It aims to explore how governments might better address distributional impacts with a view to driving more attractive and equitable policies.

Mr. Tamaki had three overarching messages with respect to promoting inclusive green growth.

- First, equity considerations are a critical building block for the green economy. Experience shows that countries that pay insufficient attention to potential inequitable impacts are unsuccessful in their reforms. To ease the transition and avoid further inequalities, it is necessary to have a better grasp of the distributional impacts of green growth policies.
- Second, the green transition is unlikely to have a significant impact on overall employment levels. There will, however, be widespread but mostly incremental changes in skills requirements across sectors, and important income effects will result from this. This again raises the question of the equitable distribution of gains and losses. Active labour market policies can play a major role in managing these challenges and cushioning the changes in income distribution.
- Third, the potential impact of policy on households is another crucial area for green reform. That impact can be disproportionately large on certain households. If such impacts are well understood, the negative effects can be mitigated and neutralised. This requires the appropriate alignment of reforms with existing tax and benefits schemes.

The OECD, he continued, has been working in all of these areas with a view to enhance modelling capacities in assessing labour market consequences. It also aims to better model the impacts on households at different points of income distribution by extending and refining household budget models. That work will be completed by case study analysis of specific policies in terms of their impact at the local level. The OECD's inclusive growth initiative is also working to integrate pro-inclusive policies in all committees and by all its international partners including the ILO, the Green Growth Knowledge Platform, and the IEA.

Mr. Tamaki concluded by expressing his hope that this Forum would help to find more effective responses to the social implications of green growth. The transition to a greener and better future depends on that.