SETTING THE SCOPE:
UNDERSTANDING THE DEMAND FOR STATISTICS CREATED BY THE SCIENTIFIC AND POLICY FRAMEWORK OF CLIMATE CHANGE AND THE ROLE OF OFFICIAL STATISTICS IN SATISFYING THIS DEMAND

NOTES FOR REMARKS BY

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Climate change is perhaps the biggest environmental threat that we face today, one that affects all of us, as individuals, as national economies and as citizens of the global community.

Scientific evidence clearly indicates that there will be serious consequences if concerted action is not taken to significantly reduce global greenhouse gas emissions.

This morning I want to talk about the fundamental elements of both domestic and international policy frameworks for addressing climate change and suggest some areas where you as official statistics experts might want to discuss what you could do to help formulate effective policies and to help report on progress in their implementation.

Climate change is a deceptive problem.

On the one hand, it appears to be quite straightforward.

Globally, about 60 percent of greenhouse gas emissions are carbon dioxide come from energy production and use, 14% are methane emissions from agriculture, waste and energy, 8 percent are nitrous oxide from agriculture and other sources, 3 percent are carbon dioxide from other sources, about 1 percent are fluorinated gases and 17 percent are carbon dioxide from deforestation and other decay.

In industrialized countries, while precise proportions vary from country to country, energy production and use is generally responsible for about 80 percent of total greenhouse gas emissions.

Two fundamental actions are required to reduce greenhouse gas emissions associated with energy production and use – the energy intensity of our economic activity must improve on a continuous basis and we must reduce the carbon content or decarbonize the energy that we use on a continually improving basis.

Making progress on these two fundamentals essentially comes down to three strategies – improving energy efficiency, switching the energy sources and fuels that we use, and capturing and permanently storing carbon dioxide from fuel combustion before it is emitted into the atmosphere.

The relative importance of each of these strategies will vary from country to country. For Canada, for instance, over the long term, switching energy and fuel sources and carbon capture and storage will likely each be the source of about 40 percent of our emissions reductions while energy efficiency improvements will likely be responsible for about 20 percent. In other countries, the relative importance of the three strategies may be quite different.

Through this lens it looks like climate change policy frameworks should be relatively straight forward with well defined and achievable end-states.

Let's look at climate change through another lens.

Energy is essential for economic growth and social development. Over the coming decades this fact will lead to a surge in energy demand. If the current trend continues, fossil fuels will provide most of the planets energy leading to a considerable rise in greenhouse gas emissions.

Reducing global emissions over the long term will require a complete transformation in the capital stock of energy producing and consuming businesses and households as well as engagement of consumers to effect major changes in consumption patterns. The broad deployment of existing and near-commercial technologies will play a central role. New low- or zero-emissions technology will also be required.

Further warming of the global climate and some associated impacts are already unavoidable. Adaptation can reduce vulnerability and is inextricably linked to sustainable development. Existing and new technologies will also play an important role in facilitating adaptation to a changing climate.

Looking through this lens, climate change is a very complex problem that involves most of the imperfectly understood systems in our societies.

Solutions that will result in real progress over the long term demand profound understanding of how the causes and effects of climate change are integrated into our social systems and their on-going development.

Progress in reducing greenhouse gas emissions will only come through a stepwise approach that sets countries on a long term path to deep emission reductions through incremental improvements continuing year over year. Such an approach requires a steady signal and a clear path forward for industry and consumers, facilitating innovation, new investment, and changed behaviour.

In order to better understand how to make these transitions over the long term so that risks are minimized, there are important information needs.

Let me outline a few from my perspective but I leave it to you to consider the roles official statistics should play. These include:

- standard macroeconomic forecasts for use in modelling work for comparative purposes;
- technology cost curves to project effective deployment of low and non-emitting technologies;
- comparison of low and non-emitting technology experience curves with other large-scale technology development and deployment experiences to better understand barriers;

- emission reduction cost curves for key economic sectors and technologies that offer high potential;
- how research and development can be expected to lower the cost of new low and non-emitting technologies;
- energy use in energy production and distribution systems;
- energy expenditures; and,
- how to build resilience to a changing climate into all the day-to-day dimensions of our societies and our economies.

Emission reduction commitments under the current international agreement guiding global actions on climate change – the Kyoto Protocol – expire in 2012.

The United Nations Framework Convention on Climate Change has been widely endorsed as the appropriate forum for the development of a new post 2012 international agreement and intensive negotiations are underway.

At the December 2007 meeting in Bali, Parties agreed to the Bali Action Plan with a view to concluding a new agreement by the end of 2009.

Discussions on elements of a new agreement are also taking place in key multi-lateral fora including the Major Economies Process, the G8, and the Asia-Pacific Economic Co-operation.

A number of principles have been proposed for a workable post-2012 climate change agreement. These include:

- Balancing environmental protection and economic prosperity, being economically realistic, and not unduly burdening the growth of any single country;
- Setting a target date for stabilizing global emissions and setting a goal of at least cutting global emission in half by 2050;

- Contributions from all major emitters – while major developing economies can obviously not be expected to make the same kind of contributions as developed countries; the science clearly demonstrates that they must be part of the solution;
- Support for the development and deployment of new and better technologies - institutional mechanisms, measures to improve the enabling environment for private sector investment, as well as direct funding initiatives to aid broad-based technology transfer will be required to support a transformation of global capital stock over the next 50 years;
- Flexibility so that all countries can choose the tools and policies that suit their unique circumstances as well as accommodating a variety of commitments as well as multi-stage efforts by countries and countries being able to agree on specific targets for emissions reductions from highly globalized industries such as cement and fertilizers;
- Mechanisms to promote reduced emissions through reductions in deforestation - as mentioned earlier, deforestation is responsible for almost 20 percent of global greenhouse gas emissions; and,

- Support adaptation to a changing climate.

A new international climate change agreement is going to have to be very robust – it will have a lot of weight to lift. A 50 percent reduction in the global greenhouse gases that were emitted in 2000 amount to something of the order of 18 gigatonnes if emissions from deforestation are excluded . That's more than the total emissions of the EU 27, the United States and China in 2000. And 18 gigatonnes of reductions from 2000 levels does not include offsetting all of the emissions growth that is anticipated under business-as-usual projections. And global reductions beyond 50 per cent may be required.

Reducing the energy intensity of the global economy and the carbon intensity of energy and fuels that will be essential will require the broad deployment of all low and non-emitting technologies that are currently available as well as major breakthroughs in energy efficiency including in the transportation sector, renewable energy, next generation nuclear, clean coal technologies and carbon capture and storage.

Again let me outline a few areas where official statistics could play a role in the international policy framework. These include:

- comparable structural definitions for key economic sectors so comparisons can be made;
- consistency and comparability in defining technology characteristics;
- bringing down the costs of new low and non-emitting technologies; and,
- improving estimates of business-as-usual improvements in energy efficiency of economic development and improvements in carbon intensity of energy production and use.

Official statistics will also have a role to play in implementing the Bali Action Plan.

The Bali Action Plan will require statistical analysis to backstop the agreed upon

- "Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity building in a measurable, reportable and verifiable manner", and
- "Measurable, reportable and verifiable nationally appropriate mitigation commitments or actions, including quantified emission limitation and reduction objectives by all developed country Parties while ensuring the comparability of efforts among them, taking into account differences in their national circumstances".

Deep reductions in global emissions of greenhouse gases means transition on many levels – transitions in policies, transitions in technologies, transitions in economies and transitions in societies. Official statistics will have important roles to play helping ensure these transitions are efficient and effective and in reporting on their progress.

Thank you