

Session 2 : The Climate Change

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Overview

- 1. The global climate policy agenda (next COP and beyond)**
- 2. The emerging climate policy agenda in Germany and internationally**
- 3. The opportunities for Sino-German Cooperation in Climate Policy**

1. The global climate policy agenda

- 1) The Paris Agreement is the basis and yardstick for climate policy. We are far from fulfilling the aims of the Paris Agreement.
- 2) People throughout the world are increasingly concerned because they have become more aware that climate change is for real. It affects their health and wellbeing already today, and puts coming generations and the biodiversity of the natural world at growing risks.
- 3) The [IPCC Special Report](#) 2018 stated that to stabilize global warming at 1.5 degrees, global emissions must be cut in half by 2030 and then achieve net-zero emissions by 2050. The new IPCC Land report highlights the challenges related to land use, agriculture, food, forestry contributing about 23% to Greenhouse gas emissions and putting the food security at risk.
- 4) Climate policy is international policy. It must be effective in achieving emission reduction and adaptation goals. Linking climate policy and development cooperation needs more attention. Art 6 of Paris Climate agreement is a basis.
- 5) COP 24 in Katowice delivered operational guidance for the Paris Agreement.
COP25 should ensure that Nationally-Determined Contributions reflect enhanced commitments to climate action for mitigation, adaptation,

transparency framework and progress on mobilizing resources for Green Climate Fund.

- 6) Climate change has a moral, ethical and rights dimension, because it affects the poorest the most, and it destroys the natural world we inherited. Pope Francis and the Pontifical Academy of Sciences have therefore many times emphasized the urgency to act together.

2. The emerging climate policy agenda in Germany and internationally

A federal climate law is planned to be finalized by German Parliament before end of 2019. Principles are that climate policy requires rethinking and reorientation in politics, society and the economy. Humanities' economic activity must integrate with cycles of nature. Change must be economically promising, socially just, ecologically ambitious. Policy should not only be sector by sector, but include economy wide policy for economic system transformations.

What to prioritize?

I highlight eight sets of policy measures – each with some detailed actions - that I think should be considered now in German climate policies and in international climate policy. Some of these may be relevant for China too, and both nations may cooperate on those where mutual interests exist and learning from each other can happen:

1) Energy system transformation

- 1) Depart from coal-based energy (by 2038 or earlier) and implement regional innovation and job creation initiatives.
- 2) Adjust electricity markets: should be efficient, decentralized with renewable energy, digitally organized
- 3) Further reducing the costs of renewables (wind, solar; the solar subsidy in Germany has laid the foundations with billions of euros from energy consumers. It is one of the most important climate policy measures in Germany and by Germany for the world).

2) change of the energy tax system

- 1) The whole energy tax system needs systematic change and be focused on incentives for climate friendliness. Current energy tax system (with feed-in tariffs, different taxes on natural gas, liquid gas, coal, heating oil

for electricity and heat, petrol, diesel, natural gas, biofuels for cars, trucks, ships, kerosene) signal misguided incentives. A new tax on CO₂ would not correct these imbalances, unless the system is made coherent in the first place. VAT can be used as a complementary element of climate policy.

- 2) There should be openness to complementary economic instruments (Emission Trading System). And economic instruments, such as incentives for private and institutional investors; improvement in the efficiency of energy use in buildings. Land use needs to be guided toward climate friendliness.

3) assume international responsibility: climate cooperation

- 1) The Paris Convention includes the opportunity to link between climate protection and economic development (Article 6: cooperation, offsets). For developing countries, especially African countries, this link between climate policy and the promotion of sustainable development is of the utmost importance (e.g. investment in agricultural innovation, climate-friendly energy sources).
- 2) German industry has started to offset its own CO₂ emissions by investing in climate-relieving measures in developing countries (e.g. VW, Bosch, Thyssen-Krupp), for balance sheet climate neutrality (investments in afforestation, investments in the expansion of renewable energy plants).

4) Changing mobility, serving health and climate policy

- 1) Enhancement of e-Mobility: charging infrastructure, low-carbon and more efficient batteries.
- 2) Fuel cell, refueling, availability of hydrogen (regulatory: minimum requirements), synthetic fuels, expanding import capacities for hydrogen
- 3) Networking of mobility technologies: Car - Cycle paths - Public transport - Pedestrians, trucks – Railways. Support changes in user behavior

5) Convert industry toward circular economy and bioeconomy

- 1) A modern economy in a world of nine to ten billion people requires the closure of carbon cycles and the use of carbon as a raw material. Use of CO₂ as a raw material for chemical products or fuels (Carbon Capture and Usage/CCU).
- 2) Climate-conscious expansion of waste management as part of a circular economy (i.e. the plastic issue)

- 3) The bioeconomy will be an essential element of the economy in the post-fossil age. These are the sustainable production and use of biological resources and processes, products and services in all economic sectors. About 40 countries world-wide have by now initiated bioeconomy strategies.
- 4) Priorities can be bioscience-based pharmaceutical and chemical industry, building materials industry, agriculture and food industry, paper and packaging industry. Implement of a few large biorefineries for biological and biochemical innovations.
- 5) Strengthening sustainable consumption in an increasingly biobased economy on both the private and state sides: Comprehensive consumer information on climate-relevant aspects of products and services (food, textiles, appliances, air travel).

6) develop changes in land use for climate mitigation and adaptation

- 1) The most recent IPCC Report on Land (August 2019) has underlined, that land use, food and agriculture and forestry must be included in climate policy. The current forms of land use have caused a dramatic loss of biodiversity and climate change is accelerating this. The consequences for a world of soon 9 billion people are dramatic, as the combination of climate change and biodiversity loss means increased risks for the world food situation.
- 2) Forrest protection and major afforestation projects internationally for storage capacity for greenhouse gases.
- 3) A comprehensive program to halt biodiversity loss through landscape conservation and species diversity programs as new economic models for rural areas (bees and other insect protection programs, renaturation of watercourses, stabilization of wetlands).
- 4) Aim for climate-neutral agriculture: The incentive and subsidy systems of agricultural support must be changed in such a way that they reward a reduction in emission sources.

7) Science and innovation offensives for climate protection

- 1) Climate policy will not be successful without further breakthroughs in research and development. Needed is a new funding landscape for climate-relevant R&D that covers the entire value chains from basic research to large-scale pilot projects in close cooperation with companies.

- 2) Electricity storage a science priority (innovation for the fourth generation of low-commodity batteries, stationary and mobile)
- 3) Heat recovery a science priority (use of renewable energy for local heat storage, heat pumps and industrial heat)
- 4) Biobased materials and production processes are key science priorities in bioeconomy.
- 5) The climate adaptation of agriculture must be promoted through innovations, with measures such as plant breeding, precision agriculture with digitization, new water use, soil-conserving ecological agricultural production.
- 6) Climate engineering: Development of assessment competences, which technological processes could be suitable to counter unavoidable climate changes with risk precautions (e.g. large afforestation programs, bioalgae cultivation, technological measures for CO₂ storage).

8) health effects of climate change need more attention

- 1) Climate change already has serious health consequences today, e.g. through air pollution, heat stress and new infectious diseases.
- 2) Health care system must adapt to the new additional challenges and become more climate-resilient. The Pontifical Academy of Sciences with WHO drew attention to the linked planetary and people health issues.

3. The opportunities for Sino-German Cooperation in Climate Policy and for sustainable development

- 1) Coordinated initiatives to move the implementation agenda of Paris agreement at COP 25 in Chile forward
- 2) Cooperation in science and innovation for climate adaptation and mitigation especially in energy and mobility sectors.
- 3) Partnering in innovations for circular bioeconomy. China may consider to be a partner in the upcoming 3rd Global Bioeconomy Summit (held November 19-20, 2020 in Berlin; a successful preparatory workshop was held in Beijing in February 2019).
- 4) Joint cooperation with countries in Africa for sustainable land use, food security, forest protection, and energy innovation.