

# **Options for a Power Sector Agreement in a Post-2012 Climate Framework**

## *A Work in Progress*

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- Sectoral Agreements in a Post-2012 Climate Framework
- Ongoing Analysis: Options in the Electric Power Sector
  - Illustrative 'strawmen' for discussion

# **Sectoral Agreements in a Post-2012 Climate Framework**

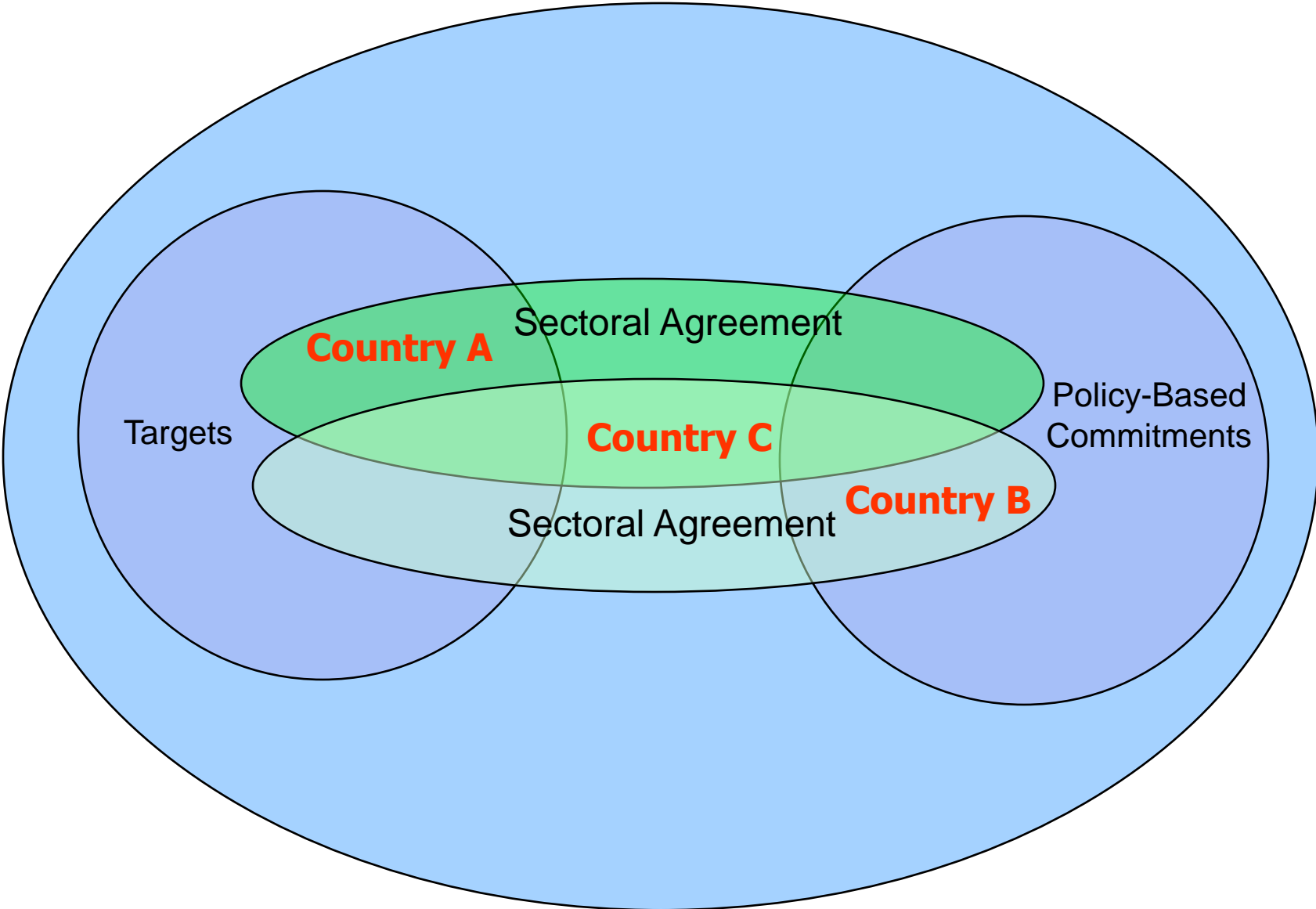
# Context: A 'Multi-Track' Framework

- An effective post-2012 climate framework requires commitments by all major economies
- The framework must be:
  - *Flexible* – Allow different types of commitments suited to varied national circumstances and strategies
  - *Integrated* – Commitments negotiated and adopted as a package

# Commitment Types

- Absolute economy-wide (Kyoto-type) targets
  - Should be required of all developed countries
- Policy-based commitments
  - Quantifiable nationally defined policies
  - Examples: intensity goals, renewable energy targets, efficiency standards, forestry policies
- International sectoral agreements
  - Agreements across governments addressing emissions from particular sector(s)
  - Could take many different forms; be differentiated
  - Could be different country groupings for different sectors
- Technology, finance, adaptation commitments

# Mitigation in a Multi-Track Framework



# Benefits of Sectoral Agreements

- Broadening participation
  - A commitment pathway for countries not prepared for economy-wide targets
- Addressing competitiveness
  - Particularly in energy-intensive globally competitive sectors
- Targeting key sectors
  - Where emissions are high, growing fast
  - Where international cooperation on technology and finance is most critical

# Issues in Integrating Sectoral Agreements

- How to assess relative effort across countries/sectors/commitment types
  - A generic issue for post-2012 negotiations
- How to mesh different commitment types
  - Internationally
    - Sectoral agreement could be sole commitment for some countries, additional commitment for others
    - For country with more than one commitment, each is an independent obligation
  - Domestically
    - How is a sector covered by a sectoral agreement treated under national cap/trade?

# **Assessing Options in the Electric Power Sector**

# Why the Power Sector?

- Large source of emissions (40% of energy-related CO<sub>2</sub> globally and growing)
- Major risk of locking in dirty technologies
- Deploying clean technologies globally requires international cooperation
  - Urgency, high cost of initial demonstration
  - Learning will need to be shared to accelerate deployment
  - Developing countries in particular will need assistance
- Can an international sectoral agreement targeting the electric power sector help play a role?

# Research Approach

- **Identified key challenges** facing power sector participants in addressing global climate change
- **Examined the landscape of approaches** including trading schemes, industry standards, R&D programs, end-user efficiency schemes and financing mechanisms, and
- **Lessons learned** from experiences to date with power sector approaches to emissions reduction and implications for international agreements
- **Developing options for international agreements** targeting carbon abatement in the power sector
- **Assessing impact and feasibility** of the different options and key success factors

# Strawman Options

*May be stand-alone options or elements of a hybrid approach*

- **Targets/trading**
  - Absolute + intensity targets w/ cross-sectoral trading
  - Intensity targets with power sector trading
- **Supply-side**
  - Low-carbon portfolio standard
  - Technology-specific standard
- **Demand-side**
  - Energy savings targets
  - Appliance efficiency standards
- **Technology RD&D**
  - Joint research and development
  - Joint demonstration initiative
- **Finance**
  - Multilateral fund of pledged contributions
  - Fund supported by generation-based contributions

# Strawman: Low-Carbon Portfolio Standard

- Countries commit to percent of generation from low-carbon sources
- 'Low-carbon' can be defined by:
  - Technology (e.g., solar, wind, hydro, nuclear, fossil with CCS)
  - Performance standard (CO<sub>2</sub>/GWh)
- Commitments differentiated according to national circumstance

## Pros

- Strong incentive for broad range of low-carbon technologies
- High degree of flexibility in choice of generation sources
- Focus on total generation, rather than new build, avoids perverse incentive to extend life of dirtier existing plants
- No constraint on level of energy use

## Cons

- Level of emissions reduction uncertain
- Little or no incentive to improve efficiency or reduce demand
- Lack of trading limits cost-effectiveness
- Requires high degree of differentiation given widely varying resource mixes
- Broad portfolio does not allow focused push for more innovative technologies

# Strawman: Energy Savings Targets

- Countries commit to targets to reduce future demand, set as
  - absolute GWhs
  - % of demand in baseline year
  - % of projected annual growth in demand
- International body sets methodologies, verifies reported savings
- Implemented nationally through efficiency standards, utility-based efficiency/demand reduction programs, and “white certificate” trading

## Pros

- Targets low-cost emission reductions
- Can drive progressive improvement in end-use efficiency
- Potential to lower long-term energy prices for consumers

## Cons

- Demand-reduction metrics difficult to quantify and, therefore, negotiate
- Utilities have little incentive to meet targets unless their performance is decoupled from revenues
- Lack of international trading limits cost-effectiveness

# Strawman: Technology Demonstration

- Countries commit to joint efforts to demonstrate and commercialize low-carbon technologies
- Funding commitments differentiated between technology-originating countries and those hosting demonstration projects
- Private sector participants drive implementation and share in resulting advances

## **Pros**

- Coordinates public and private resources to promote rapid demonstration of critical technologies across range of circumstances
- Helps build in-country capacity for future deployment
- Private sector involvement can streamline path to commercialization

## **Cons**

- Governance issues (who decides what projects where) could be difficult and time-consuming
- Could pick “wrong” technologies and deter other options
- Competitive concerns may inhibit shared learning

# Strawman: Finance for Deployment

- Governments commit to fund to help deploy commercially available low-carbon technologies in developing countries
- Contributions based on GWhs generated; rate differentiated between developed and developing (e.g., on basis of GDP/capita)
- Funds accessed via MDBs and can be bundled with other public, private and carbon finance
- Projects selected to maximize GHG reduction per \$ invested

## **Pros**

- Helps fill gap between cost of “clean” and “dirty” technologies
- Provides predictable flow of public finance
- Leverages private finance and carbon market

## **Cons**

- Governments may be reluctant to “tax” electricity generation

# Illustrative 'Hybrid'

- Agreement including:
  - Low-carbon portfolio standard
  - Energy savings targets
  - Technology demonstration
  - Finance for deployment
- For cost-effectiveness, could add:
  - Trading of green (low-carbon) and white (efficiency) certificates

# Next Steps

- Complete initial strawmen
- Gather feedback from industry, policymakers and others through interviews, etc.
- Refine and assess final set(s) of options
- Final report

# For More Information



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