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"Responding to Global Crises: New Development Paths"

## Presentation

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### **Green Economy and Green Jobs: Myth or Reality?**

Breakout Session - To Green or not to Green: Challenges and opportunities for development and decent work  
Led by International Trade Union Confederation (ITUC), 11 May 2010

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# **Green Economy and Green Jobs: Myth or Reality?**

**To green or not to green:  
Challenges and opportunities  
for development and decent work  
11 May 2010**

**International Labour Organization  
Policy Integration Department  
David Kucera**

# Green Economy and Green Jobs

- Overview of presentation
  - Defining the problem
  - Main findings of four high-quality studies
  - Conclusion: GE/GJ a myth or reality?

# Green Economy and Green Jobs

- Defining the problem

- ➔ Consider two paths:

- Path A: More green

- Path B: Less green

- ◆ Path B is often referred to as the “business as usual” scenario

# Green Economy and Green Jobs

- Defining the problem
  - When the total number of jobs resulting from Path A are greater than from Path B, let us call GE/GJ a “reality”
  - When the total number of jobs resulting from Path A are less than from Path B, let us call GE/GJ a “myth”

# Green Economy and Green Jobs

- Defining the problem

- Total number of jobs from Path A and B result from the sum of:
  - 1. Direct jobs: first round of job changes resulting from changing outputs in target industries
  - 2. Indirect jobs: subsequent job changes resulting from changing inputs required to accommodate 1
  - 3. Income induced jobs: additional jobs created by changes in household incomes and expenditures resulting from 1 and 2

# Green Economy and Green Jobs

- Four high-quality studies
  - ➔ U.S.: “Green recovery” – Center for American Progress and Political Economy Research Institute (2008)
  - ➔ EU 27: “Links between the environment, economy and jobs” – GHK Consulting (2007)

# Green Economy and Green Jobs

- Four high-quality studies
  - ➔ Germany: “Renewable energy: Employment effects” – German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2006)
  - ➔ UK: “Building a low-carbon economy” – Committee on Climate Change (2008)

# Green Economy and Green Jobs

- U.S., green recovery program
  - Uses input-output analysis to estimate effects of a \$100 billion green recovery program
  - \$40 billion: building retrofiting
  - \$20 billion: mass transit/freight rail
  - \$10 billion each: smart grid, wind power, solar power and advanced biofuels

# Green Economy and Green Jobs

- U.S., green recovery program
  - An estimated 2 million total jobs would be created
  - Compared to 1.7 million total jobs created through spending on household consumption
  - Compared to 542,000 total jobs created through spending on the oil industry

# Green Economy and Green Jobs

- U.S., main finding

- GE/GJ a “reality” for the US

- Why more jobs through a green recovery?

- ◆ Greater domestic content

- ◆ Higher avg. labour intensity of production

# Green Economy and Green Jobs

- EU 27, two main analyses
  - Uses input-output analysis for individual EU 27 countries to estimate the number of “environment related” jobs as of 2000
  - Policy scenarios based on greener substitutions and reductions

# Green Economy and Green Jobs

- EU 27, existing “environment related” jobs
  - Core definition: organic farming, sustainable forestry, renewable energy, water supply and environment-related tourism
  - 8.67 million total jobs
  - Equivalent to 6% of total jobs in EU 27

# Green Economy and Green Jobs

- EU 27, policy scenarios

<b>Substitutions (10%)</b>	<b>Jobs</b>
<b>Steel production, more recycled material</b>	3,641
<b>Agricultural production, more organic</b>	43,834
<b>Transport, more bio-fuels</b>	139,525
<b>Electricity generation, more renewable energy</b>	58,212

# Green Economy and Green Jobs

- EU 27, policy scenarios

<b>Reductions (10%)</b>	<b>Jobs</b>
<b>Water consumption</b>	5,490
<b>Energy efficiency in the manufacturing sector</b> (Near market technologies for reduction exist)	137,171
<b>Energy efficiency in the manufacturing sector</b> (Higher investment costs for technologies than prior scenario)	90,915

# Green Economy and Green Jobs

- EU 27, main finding

→ GE/GJ a “reality” for the EU 27

# Green Economy and Green Jobs

- Germany, two main analyses
  - Uses input-output analysis to estimate the number of jobs in renewable energy industry in Germany in 2004
  - Uses a macroeconomic model to estimate employment effects by 2020 of two paths using more and less renewable energy

# Green Economy and Green Jobs

- Germany, existing jobs in renewable energy
  - An estimated 157,000 jobs in the renewable energy industry
  - Direct jobs breakdown:
    - ◆ 41% in wind energy
    - ◆ 36% in biomass
    - ◆ 16% in solar energy
    - ◆ 6% in hydropower
    - ◆ 1% in geothermal energy

# Green Economy and Green Jobs

- Germany, employment effects by 2020 using macro model
  - More renewable energy: 12.7% by 2020
  - Less renewable energy: 8.3% by 2020
  - The model accounts for:
    - ◆ Labour-displacing technical change
    - ◆ Budget effects depending on relative costs of renewable and non-renewable energy
    - ◆ Foreign trade effects

# Green Economy and Green Jobs

- Germany, employment effects by 2020 using macro model

		Export scenario	
		Cautious	Cautious optimistic
Energy price scenario	Higher rel. price of renewable energy	73,600	112,800
	Lower rel. price of renewable energy	78,270	117,440

# Green Economy and Green Jobs

- Germany, main finding
  - GE/GJ a “reality” for the renewable energy industry in Germany, both now and in the future
  - However, estimated gains small relative to total employment (37.8 mill., 2007) as well as unemployment in Germany(3.6 mill.)

# Green Economy and Green Jobs

- UK, CO<sub>2</sub> emissions and GDP
  - Uses three models to estimate the effects on GDP of reducing CO<sub>2</sub> emissions 30% by 2020
  - 0.25-0.82% lower GDP in 2020
  - If annual avg. GDP growth is 2%, this is 12.5-41.0% of one year's growth over a twelve-year period

# Green Economy and Green Jobs

- UK, CO<sub>2</sub> emissions and GDP
  - Lower GDP may imply fewer jobs
  - Depends on compositional shift in industries by labour intensity
  - As we have defined “myth” and “reality”, GE/GJ may therefore be a “myth” for UK

# Green Economy and Green Jobs

- UK, CO<sub>2</sub> emissions and GDP

→ But if so, is it a necessary “myth”?

“The Committee believes that this cost is affordable and accepts it is necessary if larger climate change costs and consequences are to be avoided.”

# Green Economy and Green Jobs

- Conclusion: GE/GJ a myth or reality?
  - 3 of 4 high-quality studies find that GE/GJ a “reality”
  - I.e., greener paths mean more jobs
  - For 2000, 6% of total jobs in EU 27 are “environment related,” by a conservative definition

# Green Economy and Green Jobs

- Conclusion: GE/GJ a myth or reality?
  - ➔ Study for UK finds that if even if GE/GJ is a “myth,” it a necessary myth to avoid “larger climate change costs and consequences”
  - ➔ Implication is that not all climate change costs are readily valued in money and GDP terms

# Green Economy and Green Jobs

- Conclusion: Other important policy considerations
  - ➔ Small changes in the total number of jobs mask a great deal of labour market churning
    - ◆ Need for a just transition for workers in declining sectors
  - ➔ Decent work: Need to consider not just job quantity, not also job quality

# Green Economy and Green Jobs

Thank you