Methods and tools for assessing poverty reduction benefits

The Center for Climate Strategies and Grantham Research Institute

LEDS GP

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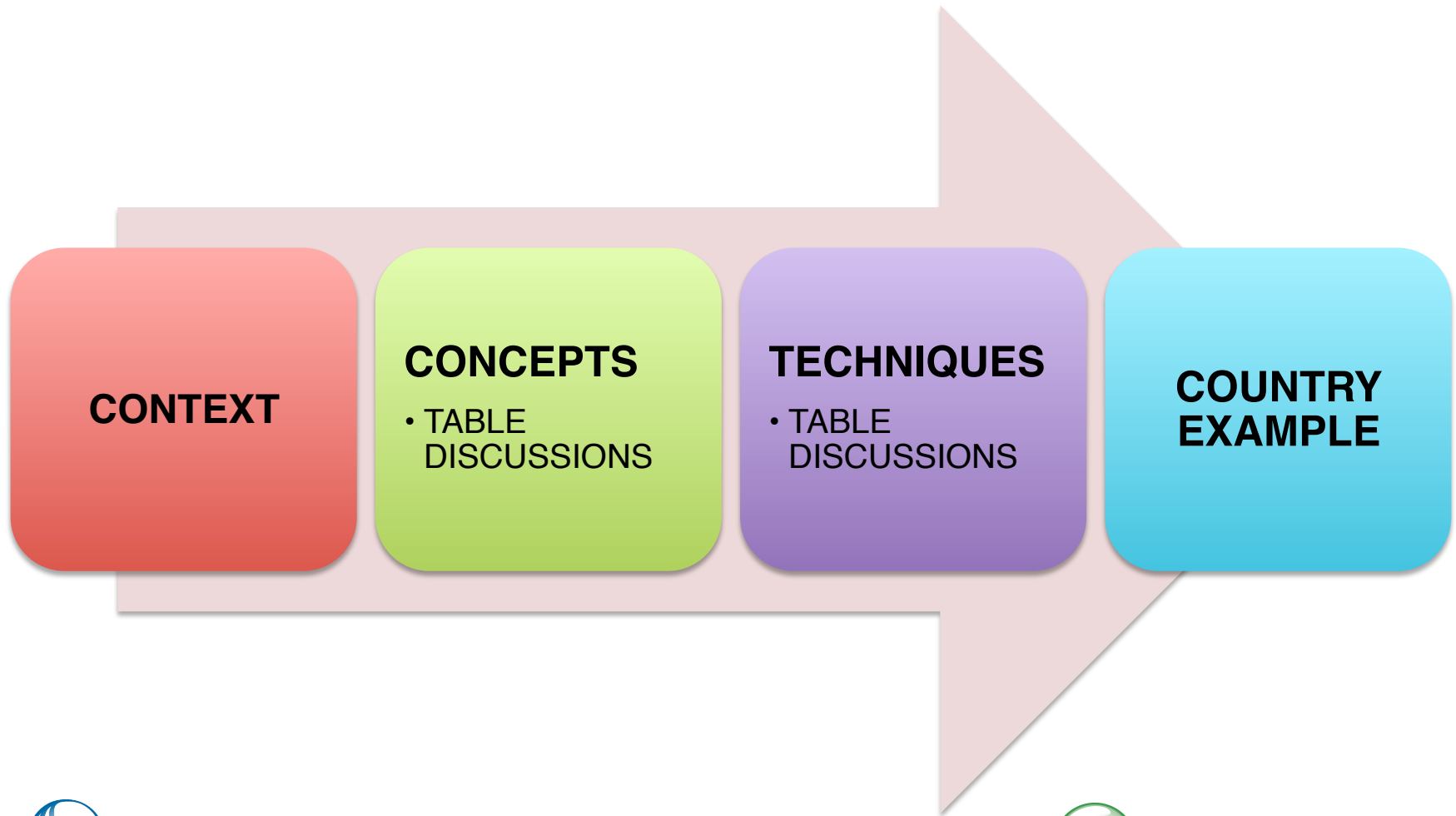Grantham Research Institute on
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Context, goals, techniques

1. INTRODUCTION AND APPROACH

Session Overview

CONTEXT

CONCEPTS
- TABLE DISCUSSIONS

TECHNIQUES
- TABLE DISCUSSIONS

COUNTRY EXAMPLE

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Context

Economic hardship

Local and global recession
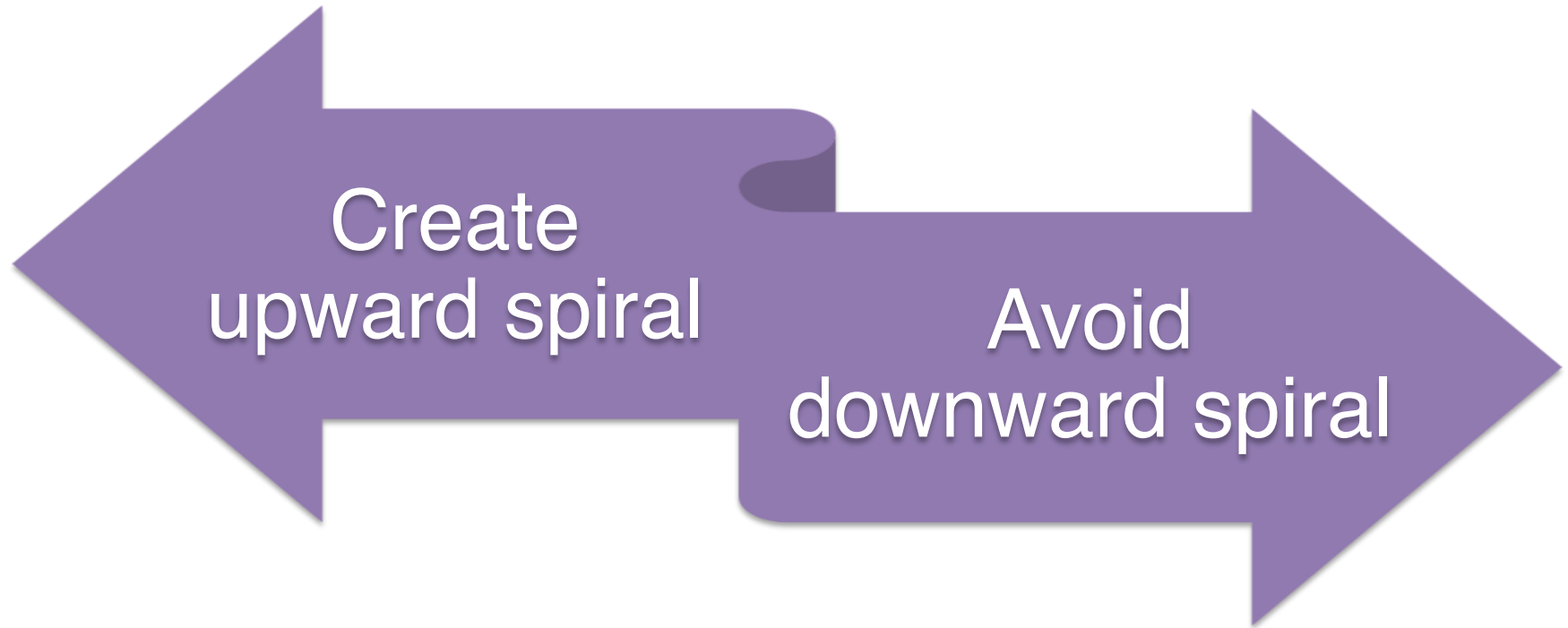
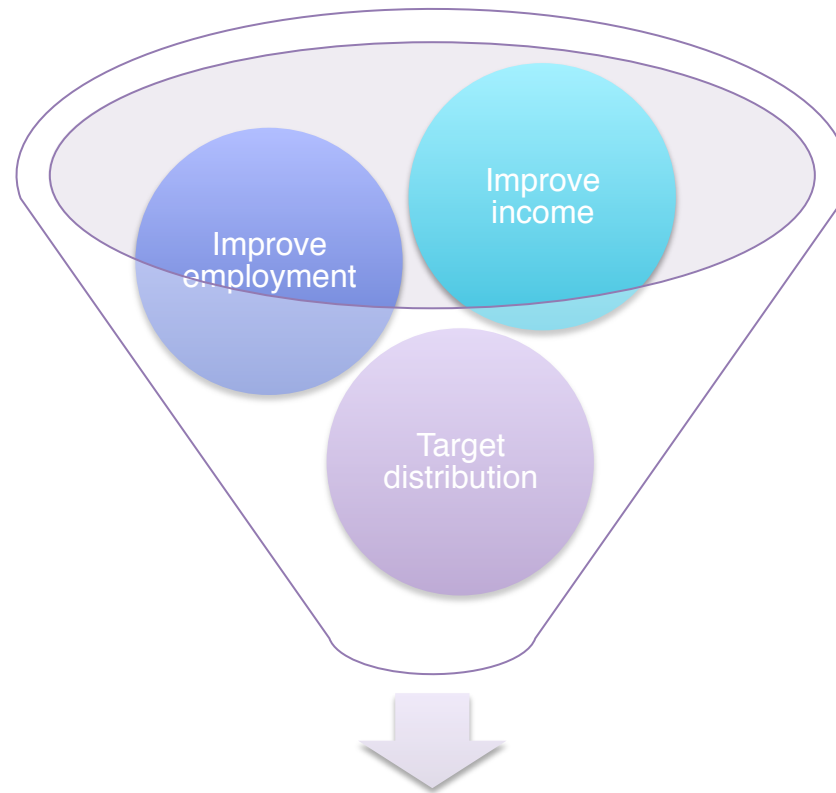Divisions within government, lack of national vision

Distraction with other priorities

Limitations on capacity and knowledge

Goals

Ingredients

Reduce Poverty

Upward Spiral

Sustainable growth, income, jobs

Controllable costs, prices

Evolution from primary to secondary, tertiary production

Imports to exports

Reduced secondary or hidden costs

Creation of value and influx of currency

Targeted, reliable reinvestment

Fewer divisions of wealth, better middle class

Concepts

Economic, energy, environment, equity (E4) are linked

Policy actions and jobs/income are linked

Policies can be chosen and designed to improve economic conditions

Policies can be tested quantifiably

Not all policy actions or designs perform well

Distribution of costs/benefits is a driver

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Macroeconomic Strategies

Cost effective approaches increase economic efficiency and expansion

Energy savings cut energy costs, stimulate labor investment

Shifts to indigenous vs. imported resources cut job outflows

Actions supported by local supply chains cut job outflows

New investment from outside sources stimulates labor investment at home

Labor intensive activities create more jobs, even if at higher cost (up to a point)

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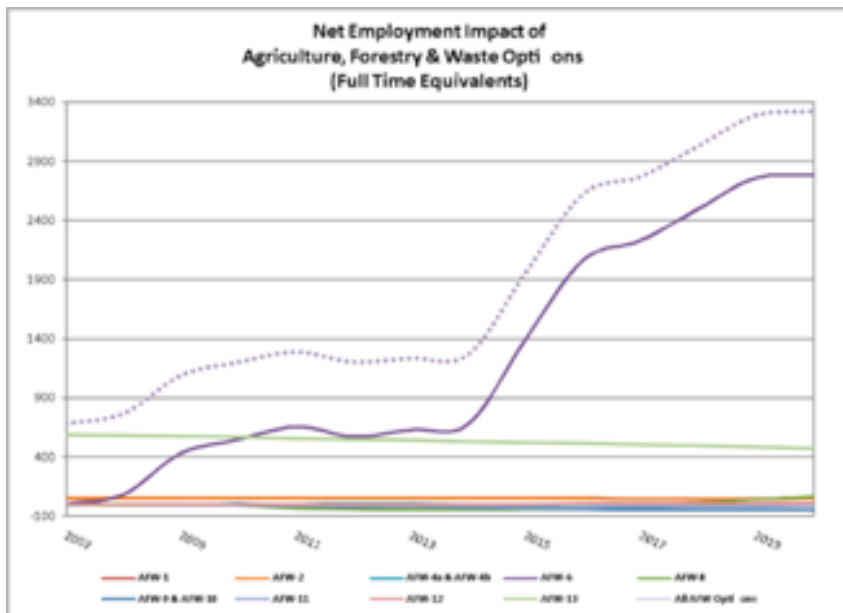Climate Change and
the Environment

Macroeconomic Strategies

- Policies that reduce cost or improve efficiency directly for those with low incomes or spending power
  - Reducing the amount of spending necessary to achieve basic needs: "income effect"
  - Avoiding significant financing barriers or up-front costs borne directly those who are poor.
- Policies that spend on less-skilled labor to execute some other goal: employment effect
- Policies that do both: Engage labor and reduce costs (eg. plant trees around homes
- Efficiency policies with *indirect* benefits to poverty alleviation:

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Evidence of Success

USA State, by Sectors/Options

Jobs, Agriculture

Income, Energy Efficiency
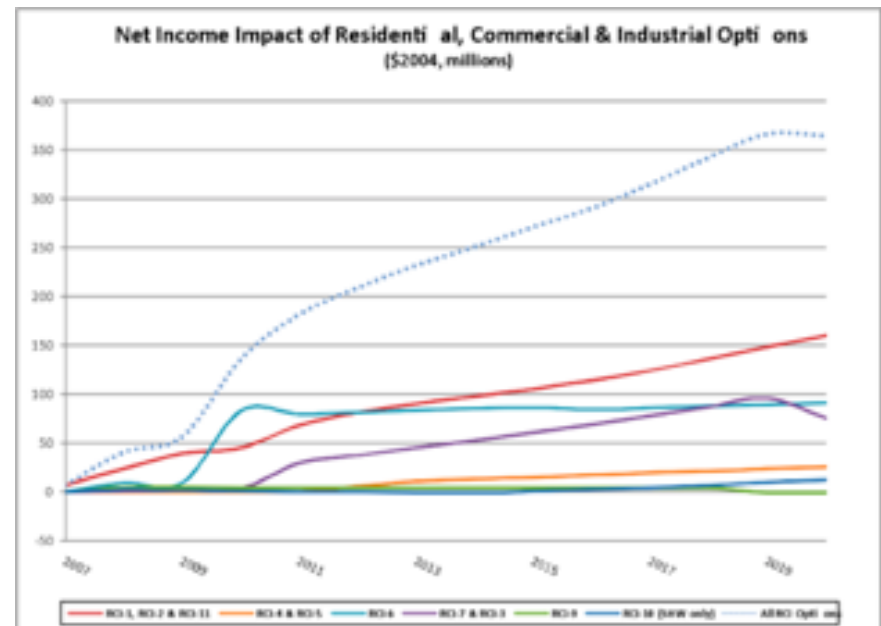
Opportunities for Labor Markets

- 'Green jobs'

- Switch to more labour-intensive technologies and processes

- More aggregate demand

- More innovation

- Co-benefits, especially better health: good for welfare, labour supply, cognitive development

- Reduced labor taxes

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Key Issues for Labor Market Analysis

- 'Green jobs' difficult to define

- Much scope for *gross* job creation in the transition to green growth

- But policy-makers seeking co-benefits should focus on *net* job creation

- Studies for high-income countries not necessarily a good guide for developing countries

- Economy-wide macro responses (e.g. impact on general level of wages) need to be understood

Opportunities for job creation:
Uncertainties e.g. India – wind energy
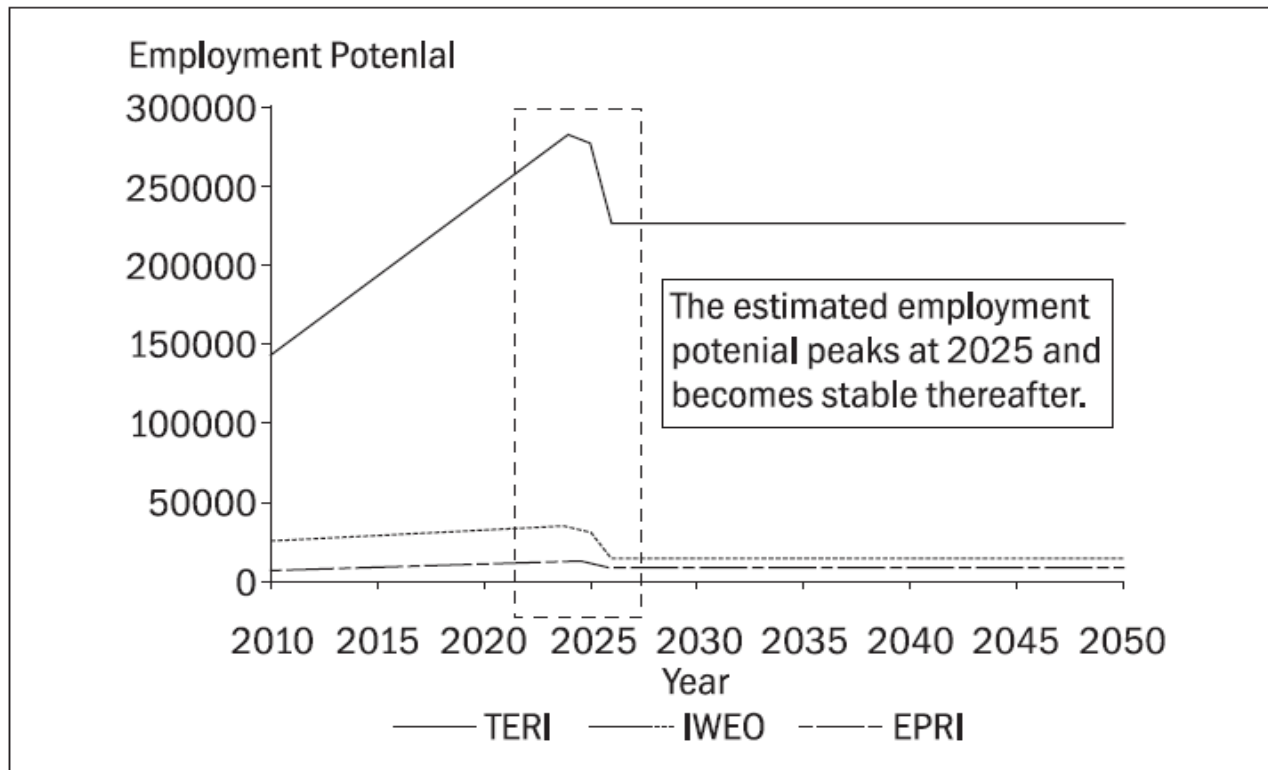
Figure 1 Employment Potential for High Growth Scenario

Source: TERI (2010)

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Opportunities for Job Creation:
Net vs. Gross e.g. South Africa

figure 7.1: jobs by technology under three scenarios
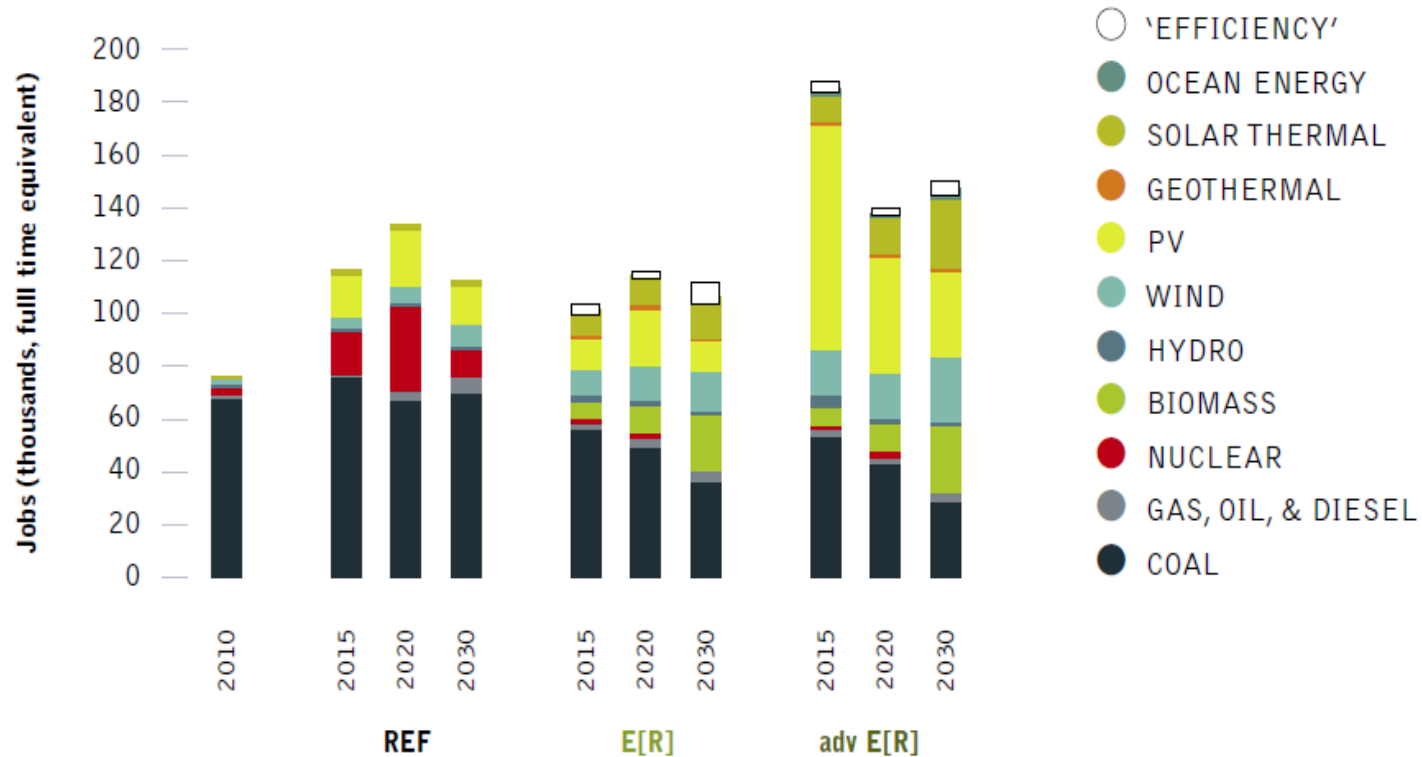
Source: Rutovitz (2011)

Challenges for Labor Markets

- 'Brown jobs'

- Higher production costs

- Lower real wages?

- Skill bottlenecks

- Need for good government and well-designed, credible policies for the environment, skill development, innovation and fairness

- Active labor market policies

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Action Plan Process

Step 1	Organization and Goals
Step 2	Baseline Development
Step 3	Policy Options Identification
Step 4	Policy Screening & Prioritization
Step 5	Initial Policy Design Specifications
Step 6	Direct (Micro) Impacts Assessment
Step 7	Policy Options Integration and Overlap
Step 8	Indirect (Macro) Impacts Assessment
Step 9	Final Recommendations & Report Transmittal
Step 10	Monitoring, Reporting, Evaluation, & Updating

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Techniques

Setting goals

Baseline Development

Policy Option Identification (catalogs, databases)

Policy Option Screening (MCA)

Policy Option Design (specific parameters)

Micro Analysis of Options (direct impacts)

Integration of micro impacts

Macro Analysis of Options (indirect impacts)

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Comprehensive Baselines

- Inventory and forecast

- Energy, environment, economy, equity (E4)

- Environment = GHG emissions and underlying resource uses, potentially other impacts (air, water)

- Need to understand E4 drivers and trends

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Poverty Metrics

- Macroeconomic
  - Per capita income
  - Employment
  - Economic growth
  - Prices
- Equity
  - Breakdowns by income, age, gender, social strata, location, vocation, business size/class, etc.
  - Distribution

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Policy Options

- Full range of potential policies and measures within and across sectors

- Relevant to goals, policy action, and place

- Examples from existing programs

- Enhancements and innovations

- Inside and outside jurisdiction

- Winning strategies for poverty reduction

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Table Discussion/Exercise 1

How would poverty reduction be incorporated into each of these initial steps for LEDS in your country?

– National vision?

– Agency priorities?

– Leadership commitments in agencies and above?

– Interagency planning mechanisms?

– Baselines?

– Existing building block policies related to LEDS?

– Scoping of new LEDS options?

– Stakeholder awareness of LEDS/green growth actions?

– Tools for micro and macroeconomic analysis and planning?

Multi Criteria Analysis, Macroeconomic Design of Options

2. OPTION SCREENING AND DESIGN

Screening and Design Process

List policy options for each sector

Selection criteria for selecting draft priorities

Benchmark or use expert judgments

Revise the list as needed

Conduct group balloting

Separate to top tier, second and third tiers

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US State Example

Economic	Energy	Environment	Equity	Feasibility
Jobs, Income, and or Growth	Diversity and or Independence	GHG Cuts Now and Later	Income	Complexity, Ease of Technical Analysis
New Markets and Investments	Reliability Now and or Later	Health – Air Quality, Water Quality, Other	Age	Technical, Market, Program, Legal
$ Total Costs	Access and or Affordability	Land, Water, Wildlife Conservation	Place	Social/ Political
Cost Effectiveness $/GHGs Cut			Ethnicity	

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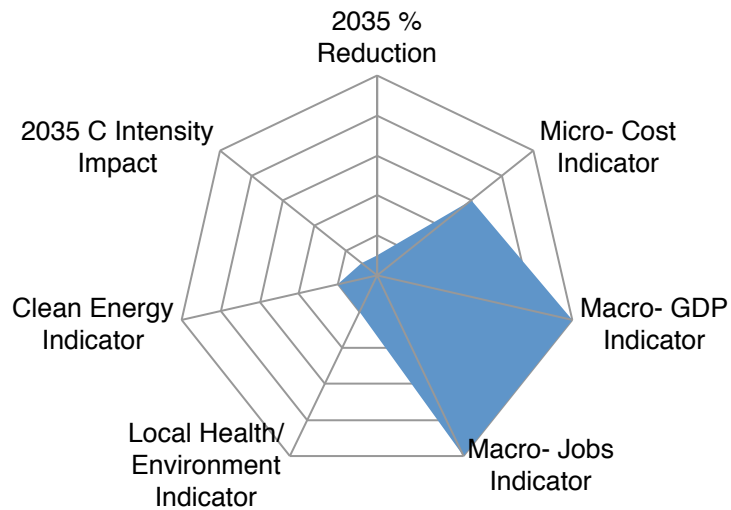Climate Change and
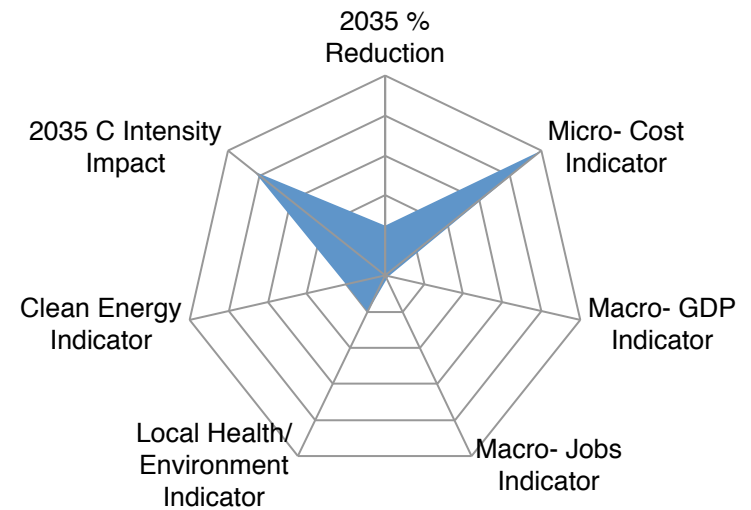the Environment

MCA Setup

Minnesota Climate Solutions and Economic Opportunities (CSEO) Project	Decision Criteria ➤	Complexity, Ease of Technical Analysis	GHG Cuts Now and or Later	$ Total Costs	Cost Effectiveness -- $/ GHGs Cut	Jobs, Income, and or Growth	New Markets and or Investments	Energy Diversity and or Independence	Energy Reliability Now and or Later	Energy Acces and or Affordability	Health -- AQ, WQ, or Other	Land, Water, and or Wildlife Conservation	Equity -- Income, Age, Place, and or Ethnicity	Feasibility -- Technical, Market, Program, Legal	Feasibilty -- Social/ Political	# Ballots	Priority Ranking
2008 Options	Ranking Scheme ➤	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	H, M, L, U, or a range/ combination	10 Ballots/ Voter, 1 For Each Preference	Tiers 1, 2, 3
Option #, Sector	Ranking Scale ➤ Policy Option Description ↧	H = x... to y... (+/-) M = x... to y... (+/-) L = x... to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)	H = x to y... (+/-) M = x to y... (+/-) L = x to y... (+/-)		
ES 3	Efficiency Improvements, Repowering and Up Grades to Existing Plants																
ES	Increase RES																
ES	Increase Solar Standard																
ES/RCII	111(d) Scenario (Including Price and Non-Price Mechanisms)																

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Policy Option Comparison

ES-1d

ES-1a

MCA Results, US State

					Agriculture, Forestry & Fisheries Actions Catalog				
Action Number	Low Carbon Development Action	Upper Limit (%) of 2035 BAU GHG 5,139 Tg CO2e BAU GHG	Realistic Screening Potential (%) of 2035 BAU GHG	Micro-economic Costs/Savings Indicator	Potential Macroeconomic Impact by 2035		Potential Impacts on Local Health and Environment	2035 Carbon Intensity Screening 239 g CO2e/¥2010	Potential Impacts on Clean Energy Goals
					Gross State Product	Employ-ment			
Group 1: AGRICULTURE & FORESTRY—PRODUCTION OF FUELS AND ELECTRICITY									
AFF-1a	Expanded Use of Biomass Feedstocks for Electricity, Heat, and Steam Production	0.19%	0.06%	100	- to +	+ to ++	U	0.15	+
AFF-1b	Provincial Liquid/Gaseous Biofuels Production for Stationary and Mobile Applications	0.015%	0.005%	100	- to +	+ to ++	U	0.012	+
AFF-1c	Improved Commercialization of Biomass Conversion Technologies	0.19%	0.02%	500	U	U	U	0.045	+
AFF-1d	Integrated Bioenergy Research and Commercialization	0.09%	0.01%	U	U	U	U	0.02	+
AFF-1e	Manure Digesters/Other Waste Energy Utilization	0.05%	0.04%	100	+	+	+	0.1	+

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Table Discussion/Exercise 2

Apply Poverty Reduction to MCA Screening

- – Which Poverty reduction decision criteria would you use?

- – Which Benchmark sources?

- – Which Expert ranking/rating?

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Policy Option Design

- Timing

- Level of effort

- Coverage of parties

- Eligibility and definitions

- Type of mechanism(s)

- Sources and uses of funds

Making Green Agricultural Policies Effective in Reducing Poverty

Source: Lovo et al. (2015): *Green agricultural policies and poverty reduction,* GRI Policy Brief, London: LSE
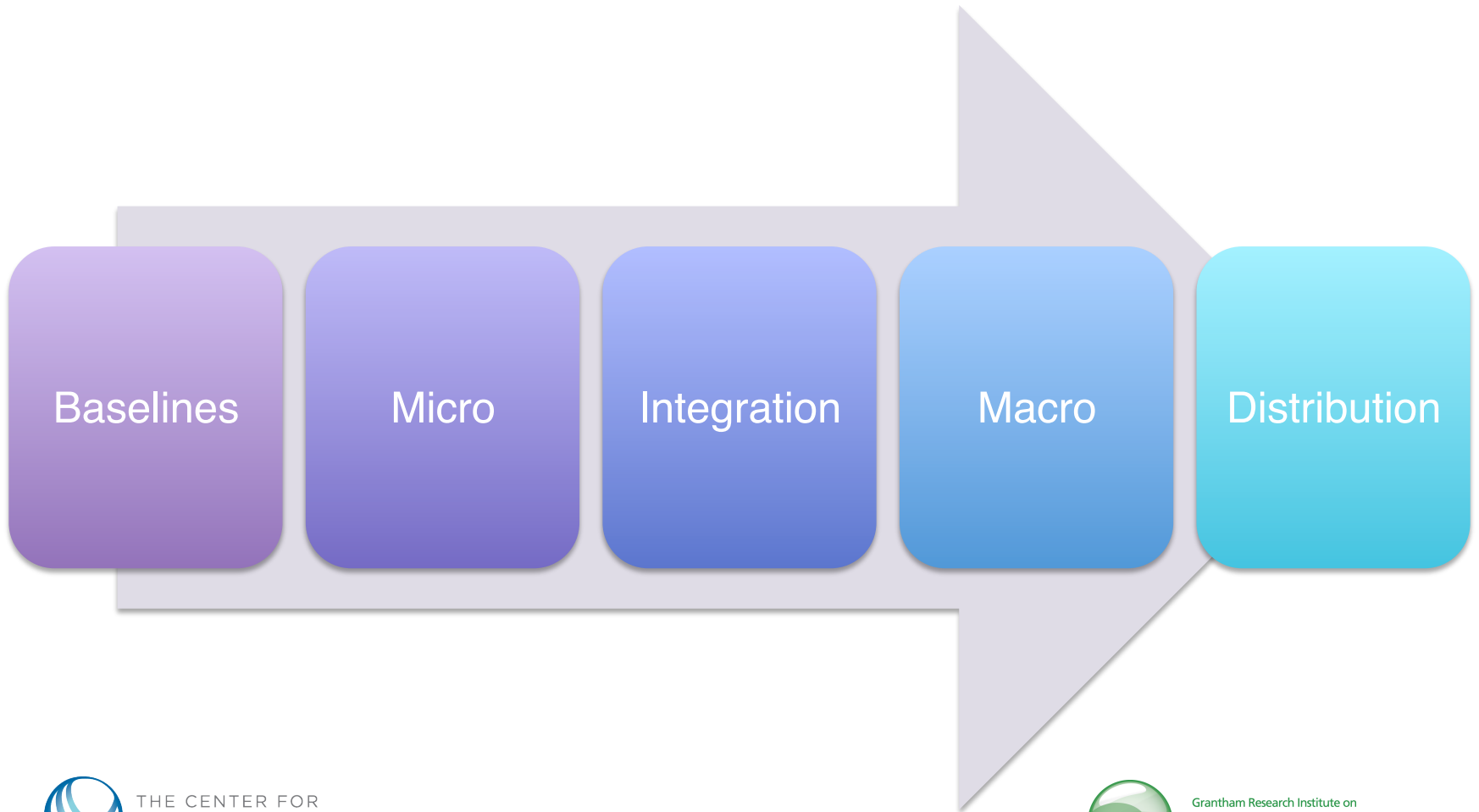
Micro, Integrative, Macro

3. ANALYSIS OF POLICY OPTIONS

Progression

Micro Analysis Set Up

- Principles and guidelines

- Common assumptions for all sectors and each sector

- End user needs

- Capacity constraints

- Templates and tools

  - Linked system (Baselines, options, micro, integration, macro)

  - Customized policy option analysis

  - Methods, Data Sources, Assumptions

  - Toolkit

NPV Example
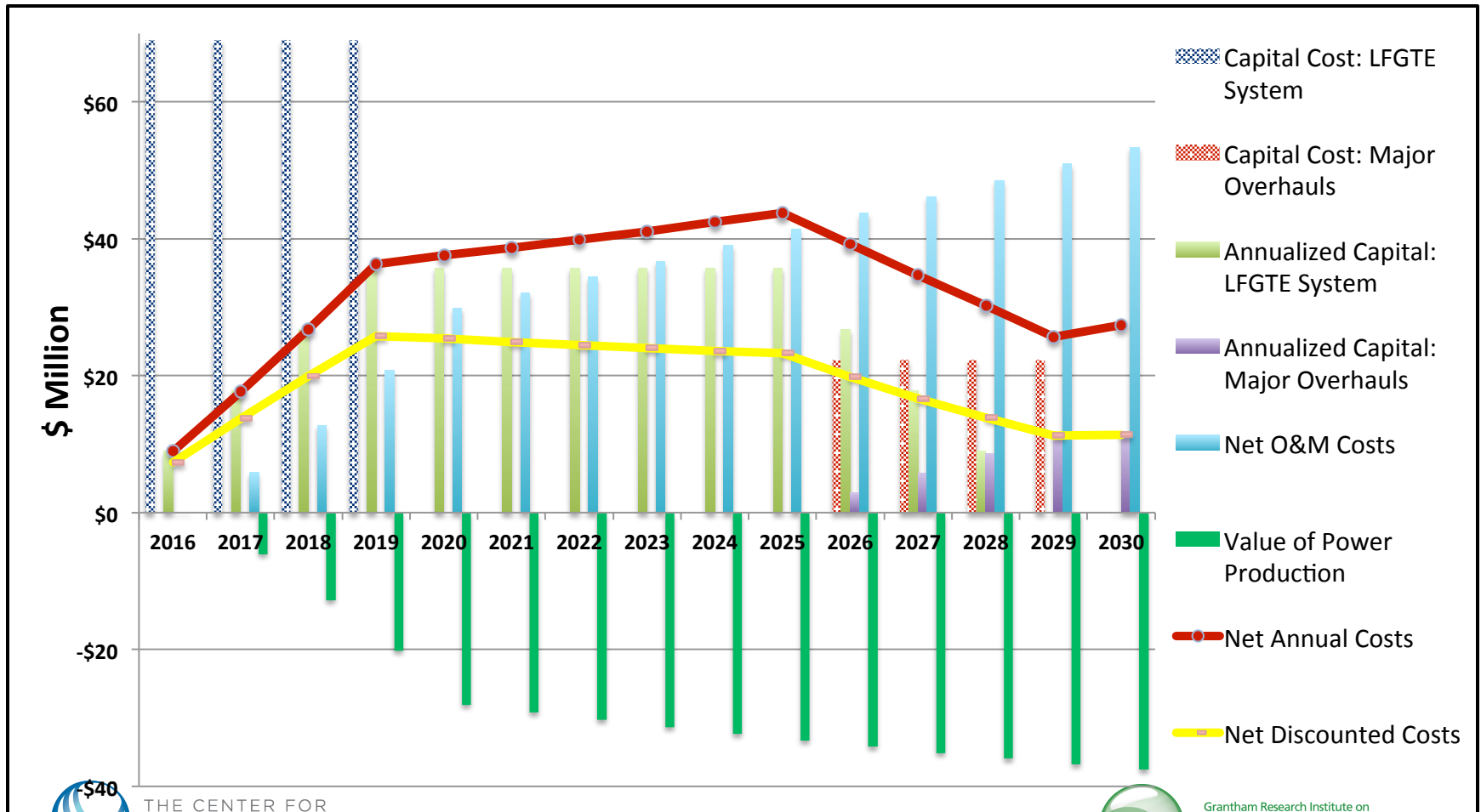
Integration

- Initial micro-economic analysis of each policy is done on a "stand-alone" basis.

- This assumes policy implementation all by itself with results calculated against business as usual (BAU) conditions.

- There are both intra-sector and inter-sector overlaps/ interactions to address

- Reduce the possibility of "double-counting"

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Macro Overview

How will people, business, government respond to direct costs and savings?

- Key Questions:
    - Change in spending: How is other spending affected? (Reallocation)
    - Change in spending: A change in demand, or a change in price?
    - Change in taxes: How will government spend that tax money?
    - Identities: Who is spending money? Who is saving? Who is selling more? Who is selling less?
    - Where is money for infrastructure coming from? Is it displacing other investment?
    - Import/Export: Are goods/services/investment entering or leaving?

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Macro Metrics

- Macroeconomic
  - Growth, income, employment
  - Prices, productivity
- Fiscal
  - Spending, savings, allocations, levels
  - Sources and uses of funds, budgets
- Equity
  - Distribution across special populations

Macro Models

- Software that models flows of money around the economy, changes to productivity, output, inflation, incomes, employment

- Models of different types (REMI, CGE, I-O)

- Data must reflect a specific economy with specific:
  - Labor productivity
  - Intermediate demand for each sector
  - Elasticities of demand
  - Costs for goods and services
  - Levels of activity in different sectors
  - And Many Other Unique Characteristics!

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Equity/Poverty Impacts

- Comparative levels

- Absolute levels

- Person and household: age, gender, location, health, wealth, role, social status, special factors

- Community: location, cultural factors, social status, sustainability, wealth, role, special factors

- Business: size, role, location, age, sustainability, special factors

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Final Results

- Transmittal to leadership
- Next steps

Country Example
Democratic Republic of Congo

Trinto Mugangu, PhD

DRC Coordinator for Low Emission Development Strategies & Climate Change Negotiator for GHG Mitigation

DRC Ministry of the Environment & Sustainable Development

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DRC

Issues:

- Dependence on fossil fuel, and unsustainable use of Earth's resources.
- More than 70% of DRC population of 71millions live with less than one dollar a day, and unemployment rates are among the highest in the world.
- A History of Plunder and Corruption

Potentials:

- Rain forests storage potential
- Mineral richness
- River system and freshwater
- Hydro-electric potential
- Increased education

DRC: National Vision

- Economic emergent status by 2030.
- Hinged on rapid development and industrialization as a means to put to work 71 millions people, and to use its abundant and diversified natural resources
- DRC leadership is open and supportive
- Challenges:
    - Skills
    - Management
    - Education
    - Policy and investment
    - Access to appropriate technology
    - Domestic production base limitation, and domestic cooperation
    - International understanding of DRC needs

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DRC: National Vision

Key objectives:

1. Create a labor pool of intelligence and know how

2. Create a middle class of entrepreneurs

3. Make DRC an agricultural success

4. Transform DRC to an energetic and environmental power with sustainable multiple use management of forests

5. Make DRC an economic and industrial pool

6. Make DRC a land of peace, stability and prosperity, and a land of wellness with clean air and good health

7. Make DRC a regional environmental & economic power to catalyze Africa's development

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Thank you for your time and attention!

QUESTIONS ?

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