Economic Sustainability Indicators for Bioenergy

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Economic Pillar of Indicators

- The 1992 Earth Summit recognized three pillars of sustainability – economic, social, environmental.
- To ensure bioenergy viability, establishing economic indicators, is essential.
- This package of indicators supports strategic development planning at the national level.
- Bioenergy can foster economic growth, expand access to energy, promote infrastructure development and create jobs – if key factors are taken into account.

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Themes

The following themes guided the development of the economic indicator:

- Resource availability and use efficiencies in bioenergy production, conversion, distribution and end use
- Economic development
- Economic viability and competitiveness of bioenergy
- Access to technology and technological capabilities
- Energy security/ Diversification of sources and supply
- Energy security/ Infrastructure and logistics for distribution and use

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Indicator 17: Productivity

- Productivity of bioenergy feedstocks by feedstock or by farm/ plantation
- Processing efficiencies by technology and feedstock
- Amount of bioenergy end product by mass, volume or energy content per hectare per year
- Production Cost per unit of bioenergy

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Indicator 18: Net Energy Balance

Energy ratio of the bioenergy value chain with comparison with other sources, including energy ratios of feedstock production, processing of feedstock into bioenergy, bioenergy use; and/or lifecycle analysis

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Indicator 19: Gross Value Added

Gross value added per unit of bioenergy produced and as a percentage of gross domestic product

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Indicator 20: Change in the Consumption of Fossil Fuels and Traditional Use of Biomass

- Substitution of fossil fuels with domestic bioenergy measured by energy content and in annual savings of convertible currency from reduced purchases of fossil fuels
- Substitution of traditional use of biomass with modern domestic bioenergy measured by energy content

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Indicator 21: Training and requalification of the workforce

Percentage of trained workers in the bioenergy sector out of total bioenergy workforce, and percentage of re-qualified workers out of the total number of jobs lost in the bioenergy sector

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Indicator 22: Energy diversity

Change in diversity of total primary energy supply due to bioenergy

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Indicator 23: Infrastructure and logistics for distribution of bioenergy

Number and capacity of routes for critical distribution systems along with an assessment of the proportion of the bioenergy associated with each

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Indicator 24: Capacity and flexibility of use of bioenergy

- Ratio of capacity for using bioenergy compared with actual use for each significant utilization route
- Ratio of flexible capacity which can use either bioenergy or other fuel sources to total capacity

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