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SLIDES: Appropriate Sustainable Energy Technologies: A Light to the World

Lakshman D. Guruswamy

Jason B. Aamodt

Blake Feamster

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Appropriate Sustainable Energy Technologies: a light to the world

Dr. Lakshman D. Guruswamy

Jason B. Aamodt

Blake Feamster



THE ISSUES

- ▶ Equity
- ▶ Poverty
- ▶ Development
- ▶ Climate Change

THE ANALYSIS

- ▶ Legal philosophy
- ▶ Thermodynamics
- ▶ Economics



▶ ASET's Potential

▶ /theoretical perspective



THE ISSUES

A decorative graphic at the bottom of the slide consists of two overlapping, rounded shapes. The upper shape is a vibrant green, and the lower shape is a bright yellow. Both shapes have a white outline and a slight gradient, giving them a three-dimensional appearance. They are positioned against a dark gray background that has a subtle, fine-grained dot pattern.

EQUITY

- ▶ 1,300,000,000+ people without access to technologies that make **useful work**
- ▶ 2,000,000 people die each year needlessly from soot
- ▶ Millions more die of water borne diseases each year

POVERTY/DEVELOPMENT

- ▶ 1,000,000,000 earn \$1.25 per day
- ▶ “Poverty trap” – energy technology
- ▶ Poverty increases population
- ▶ Increased population stresses resources

CLIMATE CHANGE

- ▶ Black soot reduction can have significant GCC impacts
- ▶ Methane reduction can have significant GCC impacts

ASET'S POTENTIAL

- ▶ Clean indoor air - Cook stoves
 - ▶ Eliminate 2,000,000 deaths per year
 - ▶ Reduce climate change
- ▶ Clean water – Tata Swach Water Filters
 - ▶ Save millions of lives with clean water
 - ▶ Significantly reduce energy needs

ASET'S POTENTIAL (CONT)

- ▶ Light/engine power/cooking/light – bio gas/ethanol
 - ▶ Reduce climate change
 - ▶ Provide for development
 - ▶ Increase sovereignty/economy
- ▶ Electricity – bio gas, low head hydro, solar, wind
 - ▶ Provide for economic development
 - ▶ Increase sovereignty/economy

ANALYSIS

JUSTICE

- ▶ Rawls – “ “[w]ell-ordered peoples have a duty to assist burdened societies.”
 - ▶ ASETs build up local capacity - assist
 - ▶ ASETs build up local economies – assist
 - ▶ ASETs avoid high GHG technologies – assist *future* development/economies
 - ▶ ASETs assist with protecting sovereignty

JUSTICE (CONT)

▶ Egosim

- ▶ ASETs useful energy *now* – preferable to waiting 20 years for electricity
- ▶ ASETs create economic development *now*
- ▶ ASETs can help reduce population growth
- ▶ ASETs can reduce resource demands
- ▶ ASETs can increase economic opportunities –
for all

THERMODYNAMICS

- ▶ ASETs are **inherently** much more energy **efficient**
 - ▶ Less energy is needed
 - ▶ Increases Developing Country Sovereignty
 - ▶ Increases economic opportunities/development
 - ▶ GHGs are reduced/eliminated/reversed by ASET

ECONOMIC PERSPECTIVE

- ▶ Ayers
 - ▶ Focus on **EXERGY**
 - ▶ **Metabolism** of an economy
 - ▶ Can increase current and future economies
- ▶ GHG reduction
 - ▶ Can be many times more effective than other techniques
 - ▶ Can accomplish with lower **present** costs
 - ▶ Can eliminate un-needed **future** retrofits/costs

CONCLUSION

- ▶ ASETs should occupy the highest status to meet the goal of energy for all.