

Financing Bioenergy Projects

Barriers, Risks, Solutions

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Agenda

- **E+Co Introduction**
- **To financiers**
- **To project developers**

•Who is in the room:

- Who is a financier ?
- Who is a developer / entrepreneur ?
- Who is in policy / science / government ?

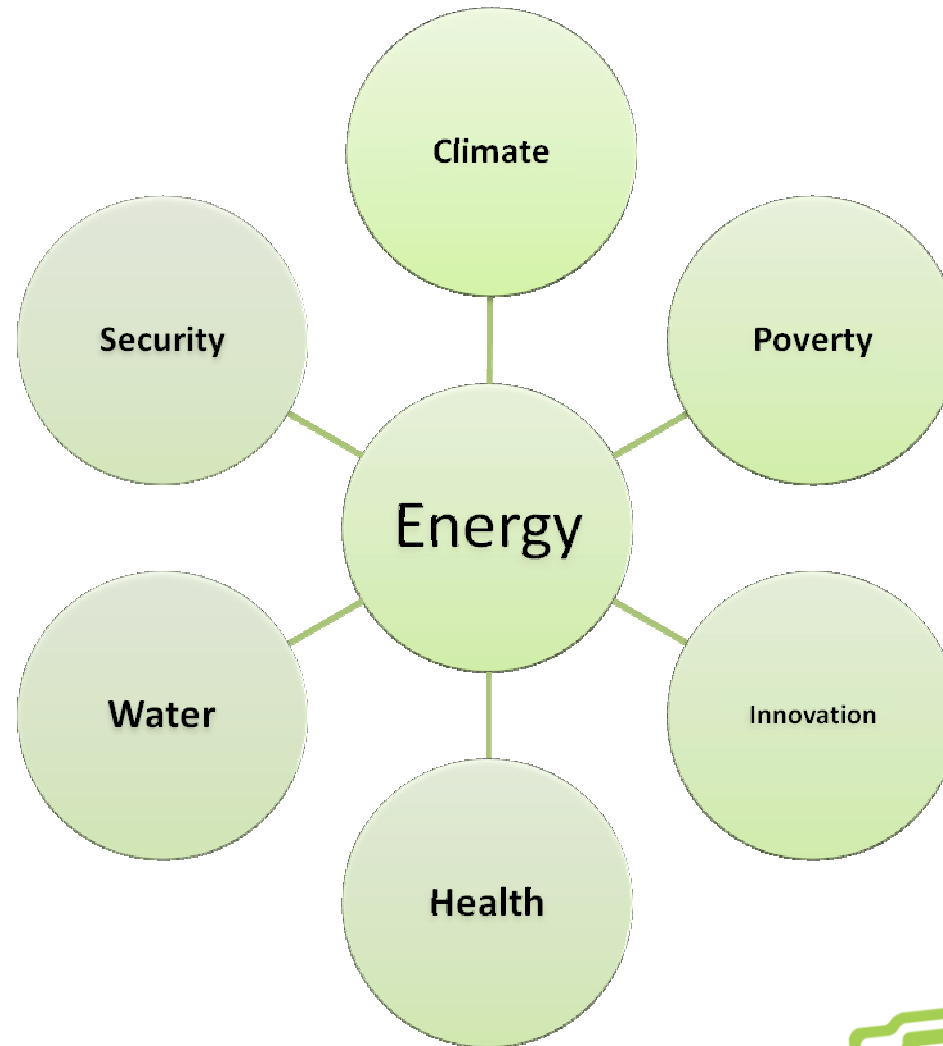


**To support clean energy, E+Co
invests services and capital in
clean energy businesses.**

E+Co

- Non-profit investment group
- Established 1994
- Invests exclusively in clean energy businesses
- Works in 25 developing countries
- 10 offices (incl. Ghana, Tanzania, South Africa)

Why Clean Energy?



Energy & Climate

Our dependence on dirty, non-renewable sources of energy causes global warming. This global warming contributes to an increase in drought, flooding, rising sea levels, biodiversity loss and other natural disasters that have a disproportionate effect on people in developing countries who are poorly equipped to adapt to such changes in climate.

Energy & Health

Half of the world's population uses dung, wood, or coal to meet basic energy needs. Cooking and heating with such fuels leads to indoor air pollution. Every year, indoor air pollution is responsible for the death of 1.6 million people - that's one death every 20 seconds.

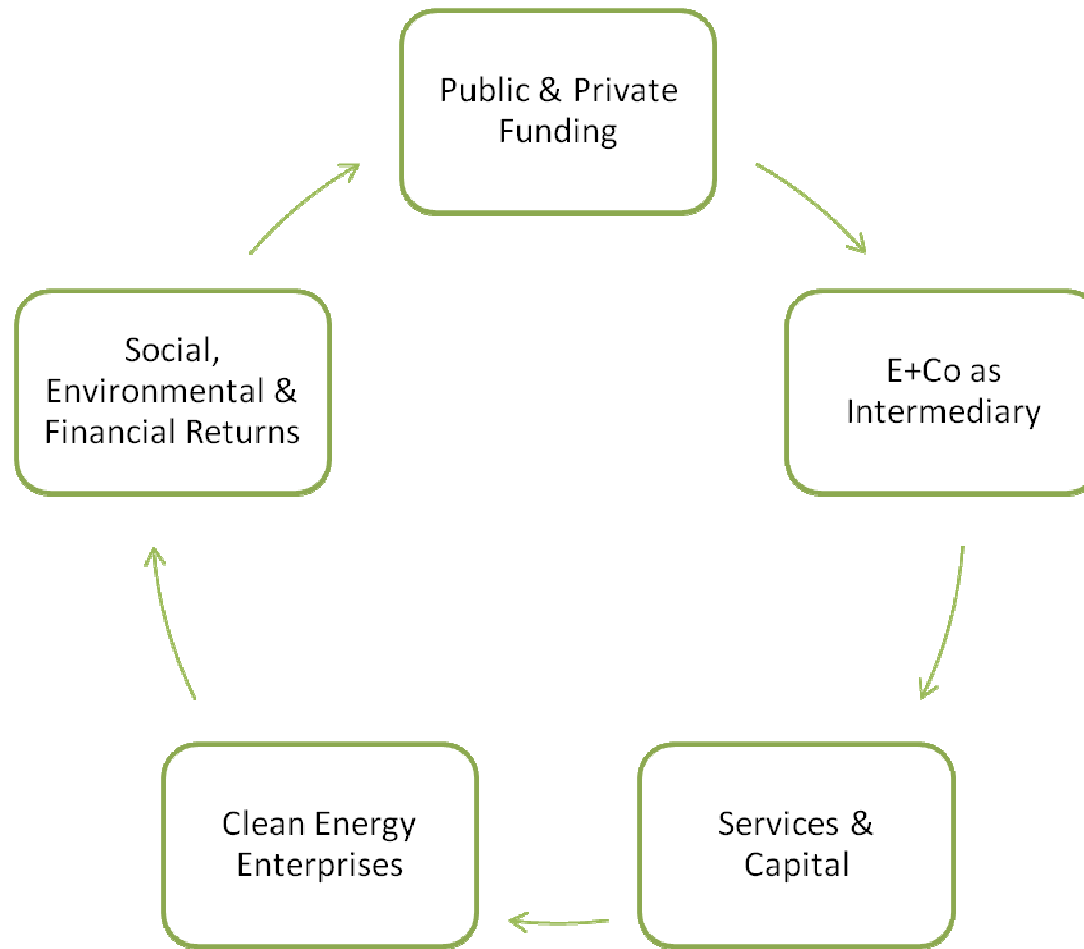
Energy & Poverty

Energy is fundamental to poverty alleviation. Its absence bears heavily on all other indicators of poverty such as hunger, water, health, agriculture, education and productivity. An astonishing 1.6 billion people live without access to electricity. Under the current paradigm, by 2030, 1.4 billion people will still not have electricity.

How We Tackle the Energy Problem



Our Business Model



Services + Capital

Services	Capital
•Pre & Post-investment Support	•\$25K - \$1M
•Business Planning & Proposal Writing	•Start-up and Growth Capital
•Market Research, Assessments & Segmentation	•Independent Investment Committee Approved
•Financial, Accounting & Technology Support	•Mobilize Third-Party Capital

La Esperanza: 13 MW hydro - Honduras

- Serving 33,000 households and 18,000 commercial clients
- Offsetting 35,000 tons of CO2 annually
- Tree reforestation project – 40,000 trees replanted
- Micro-lending program
- 3 serial investments for total \$1.25M
- Mobilized \$16M in 3rd party capital
- First small-scale renewable energy company registered under CDM



Toyola: Efficient cook stoves - Ghana

- Employs more than 100 artisans
- Serves more than 70,000 customers
- Saves lives – reduces indoor air pollution
- Saves trees and reduces greenhouse gas emissions
- E+Co serial investments for total of \$170,000



Clean Thai and KWTE

- Pipeline of 10 projects for biodigestion plants in the food and beverage industries, municipal waste facilities and animal waste facilities.
- Clean Thai's success in developing industrial projects has created additional international investor activity in the sector.



E+Co's Value Added

- Start-up capital to advance project planning and negotiations.
- A follow-on investment provided the resources needed to market and design the specific proposal for the cassava factory.
- E+Co was instrumental in attracting equity investors.



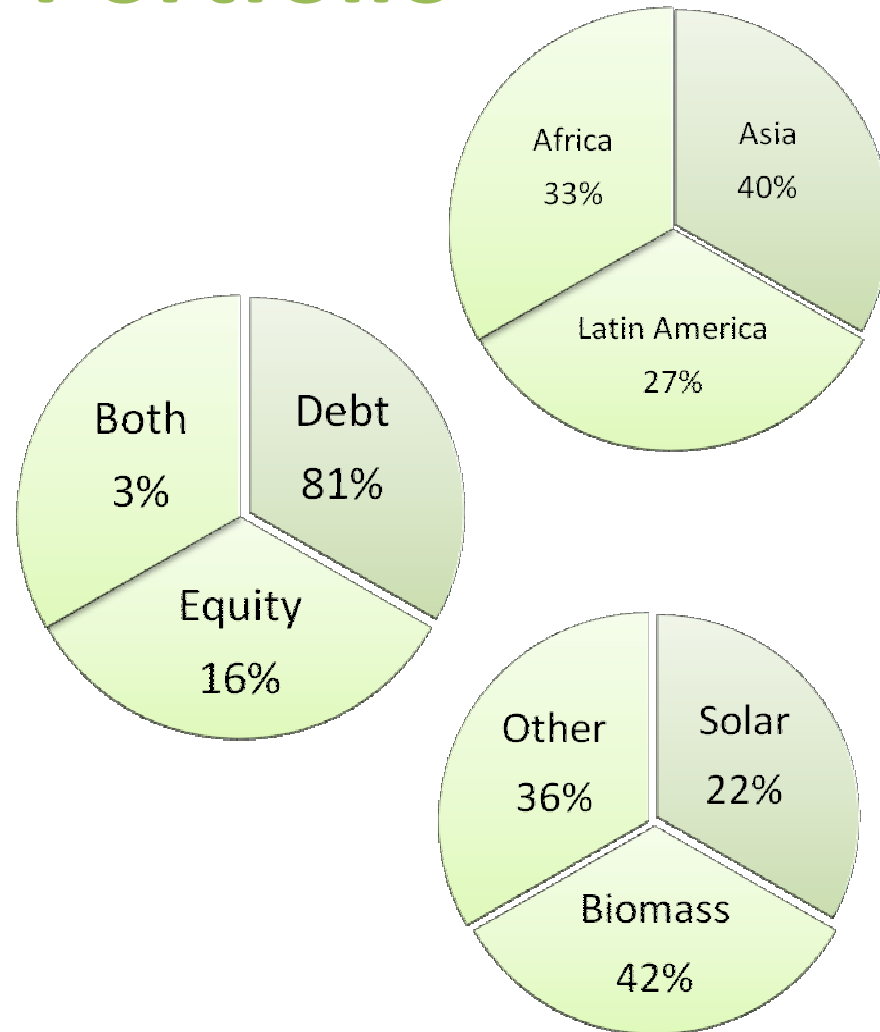
Bio2Watt – 2MW waste-to-energy – S.Africa

- First-time entrepreneur in first-time ever grid connected 2MW waste-to-energy in S Africa.
- E+Co lends USD 100k for feasibility study and pre-implementation; now converted in equity in a joint venture;
- First project ready to invest – E+Co arranges co-financiers and designs financial structure
- Three more projects in pipeline
- Additional pipeline offered by new partners

E+Co Portfolio

- Solar
 - Wind
 - Liquefied Petroleum Gas
 - Hydro
 - Natural Gas
 - Energy Efficiency
 - Biomass**
 - Biogas**
-
- Debt & Equity
 - Range = \$25K - \$1M

•* by number of investments



Our Triple Bottom Line Returns

Social	Environmental	Financial
Access to Clean Energy 5.6M	Carbon Dioxide Reduced 4M tons	Capital Invested \$36M
Entrepreneurs Trained > 1,000	Trees Reforested 525,000	Capital Mobilized \$213M
Income Generated \$8M	Decreased Oil Consumption 670,000 barrels	Portfolio Return 8.4%

Bioenergy financing – snap shot

- Excellent market place: gigantic demand with willingness to pay and capacity to pay.
- Favorable outlook in all critical elements: legal, finance, track record.
- First successes showing.
- Increasingly robust pipeline and transparency.
- Right now specialist financiers in the lead, but increasing volume for other financiers.

Financing Barriers for Investors

- Project developers often inexperienced
- Many first-time projects; little track record
- Bundling of smaller projects needed for most investors
- Local co-financing absent or inappropriate
- Lead time until closing and again until cash flows

Financing Risks for Investors

- Long term investment in fragile market
- Incomplete regulatory and legal framework
- Little track record – few benchmarks
- Lots of greenfield plans with high projected returns
- Risk / return profile
 - Actual returns probably fair, but not excessive
 - Risks probably moderate but needs to be proven

Financing Solutions for Investors

- Ensure 'clean, affordable, reliable' energy is included in desired returns.
- Speed-up learning curve and team up with experienced and dedicated financiers.
- Benefit from funding via political agenda for :
 - 'access to energy'
 - carbon offsets
- Apply appropriate instruments and terms: debt over equity.

Financing Barriers for Developers

- Greenfield: little or no experience
- High up front costs
- Local co-financing absent or inappropriate
- Lead time until closing and again until cash flows

Financing Risks for Developers

- Short of cash when project becomes viable
- Frustration in getting all aspects together in timely and efficient way (permits, funding, carbon financing)
- Crucial issues only clear in the end:
 - Rights (waste-stream, land)
 - Energy off-take terms and tenor (IPP, PPA)
 - Financing commitments: subsidies, equity, debt

Financing Solutions for Developers

- Seek dedicated partners and financiers with aligned objectives in early stage.
- Use 'Project Development Cycle' for planning and engaging partners.
- Benefit from lessons learned; avoid re-inventing the wheel.
- Know your added value and appreciate that of others.

Bioenergy – snap shot (again)

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Thank you!

Please contact Erik Wurster (E+Co Carbon manager) or myself for questions and suggestions.

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