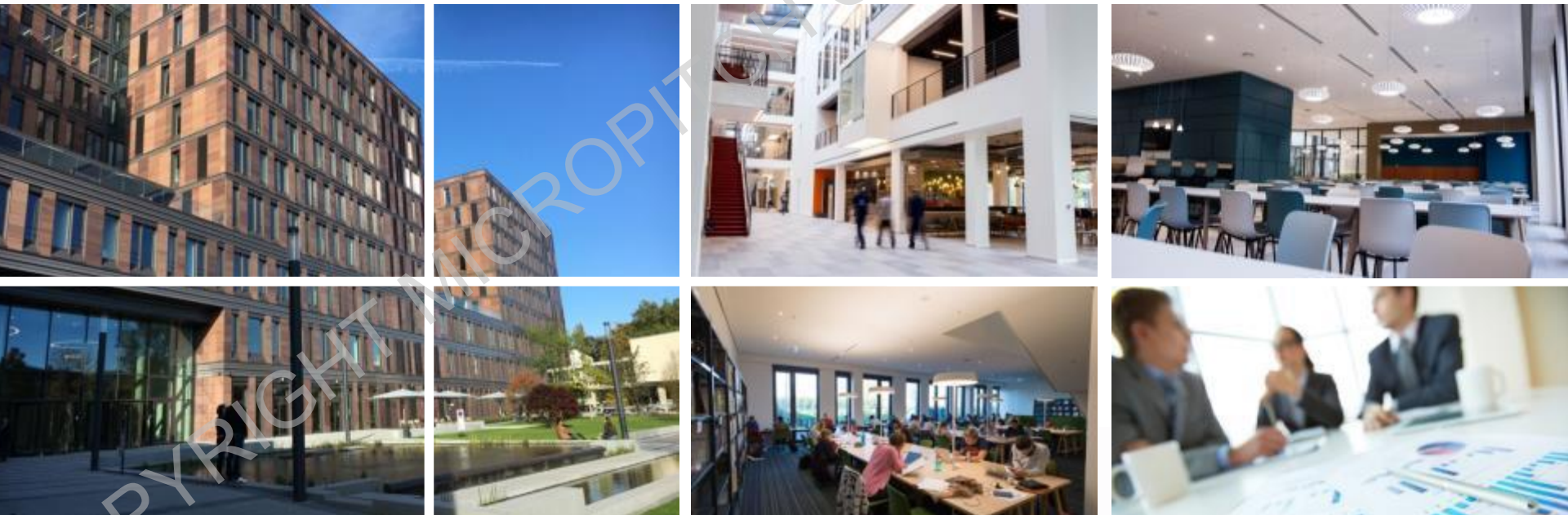


TA Programme to EIB Financial Sector Operations in the Caribbean Region

Green and Sustainable Business Practices: Win-win for my business and the environment



November 11th, 2021

TRAINERS



Diana Kollanyi
Climate Finance Expert

Diana Kollanyi is a Senior Project Manager at the Frankfurt School of Finance and Management with 12 years of experience. She specializes in climate finance, SME development, development finance, business and incubation support, and project management. Diana worked on RE on- and off-grid projects across Sub-Saharan Africa supporting project developers and companies to become investor ready. Activities also included transaction advisory, due diligence, investor matching and trainings.



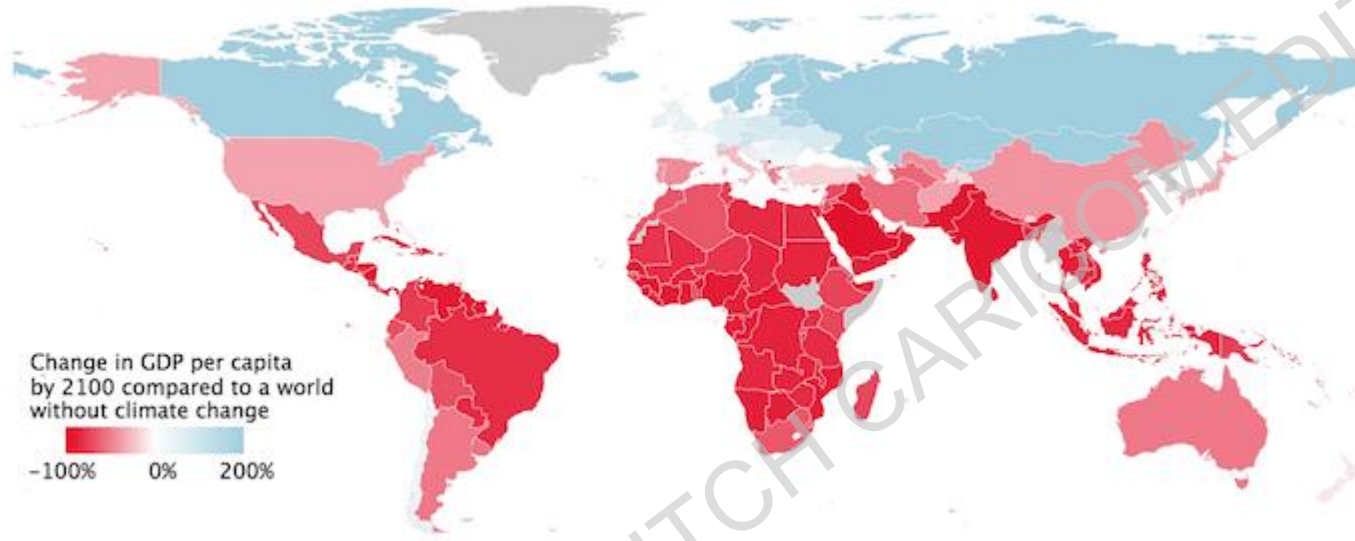
Maria Jesus Baez
Clean Energy Finance Expert

Maria Baez has been working for more than 10 years in financial assignments exclusively focused on renewable energy and clean energy technologies. She has extensive experience working with equity investors and banks in renewable energy advisory, and alongside technical consultants, project stakeholders, lawyers, landowners, and local councils. Maria was involved in M&A, Due Diligences, origination of transactions, equity and fund raising, expert and viability assessments, project finance modelling, PPA contracts, capacity building for banks, and regulatory consulting.

AGENDA

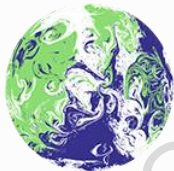
- 1. What are sustainable business practices**
- 2. Why should I use environmentally sustainable approaches to boost my business**
- 3. Introduction to RE projects / EE measures for SMEs**
- 4. How to evaluate projects**
- 5. Key elements for SMEs to consider**

Sustainability and its Rationale



Source: www.stanford.edu (<https://web.stanford.edu/~mburke/climate/>)

Global Players



**UN CLIMATE
CHANGE
CONFERENCE
UK 2021**

IN PARTNERSHIP WITH ITALY

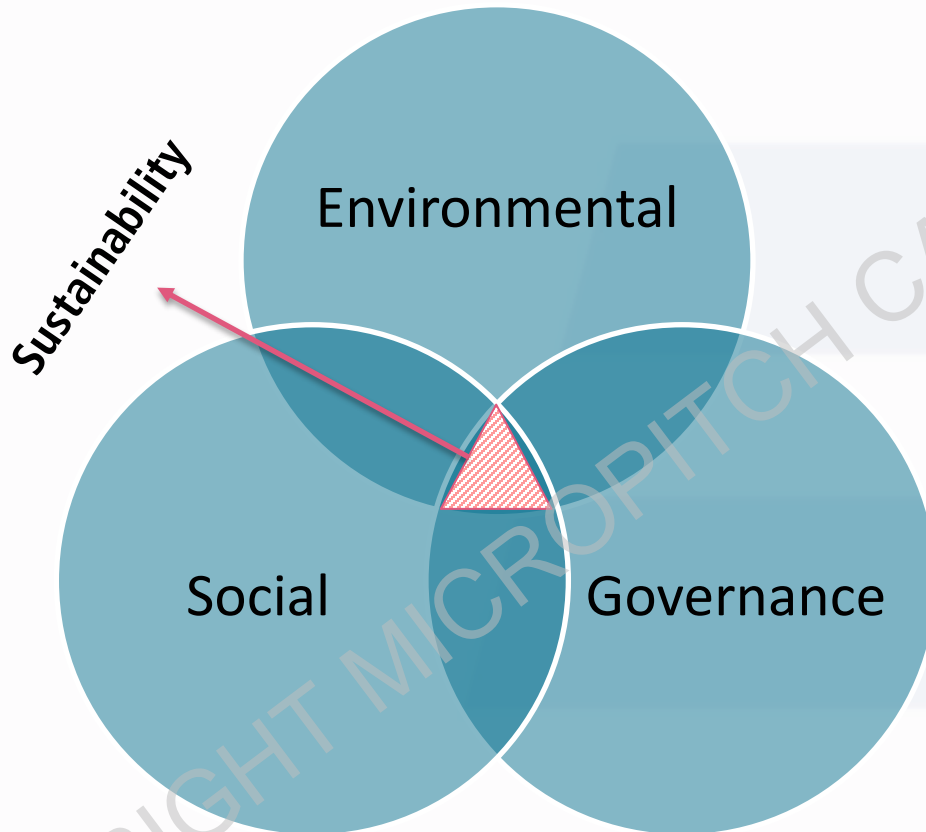


**European
Investment
Bank**



And many more...

Definition

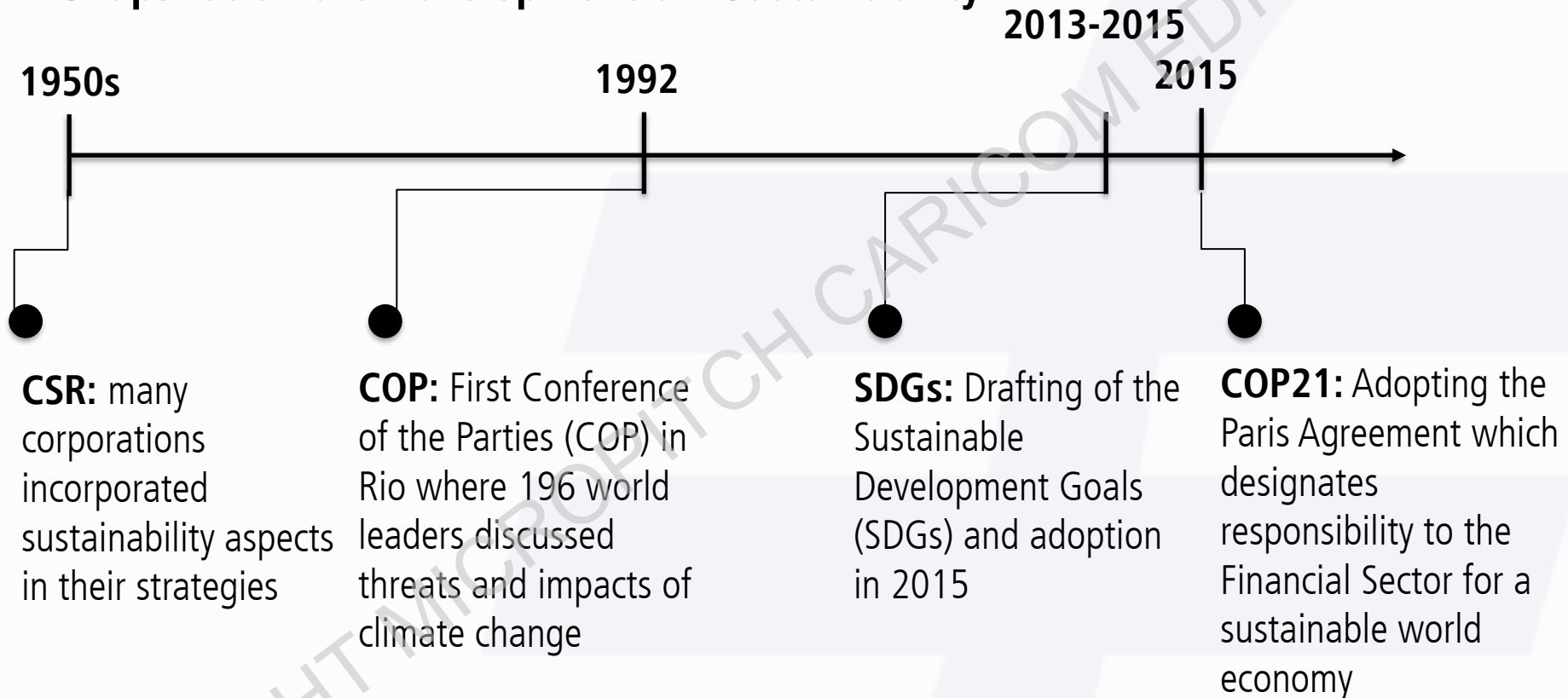


- **E:** reduce pressure on the environment; addressing green-house gas emissions and tackling pollution; minimising waste and improving efficiency in the use of natural resources.
- **S:** create social impact in the local and global communities, customers and employees
- **G:** Looks at leadership, accountability, internal controls and shareholder rights

Often also referred to as the „**triple bottom line**“ of *planet, people, profit*

Most investors have adopted their own, or follow an established ESG standard for assessment of investment options and returns

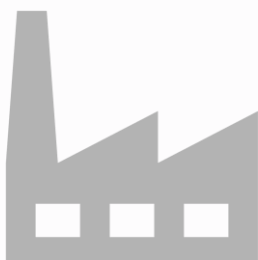
Snapshot on the Development of "Sustainability"



AGENDA

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Sustainability in a Business Context



Business
value chain

The extend of ESG impacts depends on the scale and complexity of the operation, as well as the sector and geographic context:

- ⚠ **Environmental impact:** waste and affluent management
- ⚠ **Hazards to human health:** noise levels, smells/irritants, fire risk, occupational health and safety
- ⚠ **Social and labor issues impacting local communities:** labor conditions, relations with local communities, grievance mechanism
- ⚠ **Governance, Regulatory compliance and liability:** liabilities due to issues with integrity, corruption, terrorism, etc.

**Different stakeholders
are affected and can react differently
to the various ESG impacts**

Green Investments

Green investments. A 'green investment' must have a positive impact on the environment. For example, by reducing the pollution of air, water, land etc. or by contributing to the protection, restoration and/or sustainable management of ecosystem health and resilience.

'Green investments' are not limited to specific sectors. In fact, **there is green investment potential (e.g. energy and resource efficiency) in almost every sector, from the extraction of raw materials, through manufacturing, to services.** Yet, the following sectors may be considered as particularly relevant due to their a) high potential for negative impact on the environment and society; b) high potential for positive impact regarding climate change mitigation and adaptation.

- Environmental and health & safety permits in place, and organizational capacity to manage environmental and social risks.
- Ability to demonstrate that the planned investment will have a positive impact as defined by the "three pillars of green investments".



Manufacturing
and energy



Construction
and buildings



Agriculture
and water



Forestry
and fisheries



Waste
and recycling

Sustainability in a Business Context

	General E&S management	Labour and working conditions	Pollution prevention and resource use efficiency	Community health, safety and security	Biodiversity conservation and natural resources management	Land acquisition and involuntary resettlement	Indigenous People and cultural heritage
Design and Construction phase	● ●	● ● ★	● / ● ●	● / ● ●	● / ● ●	● / ● ●	● / ● ●
Agribusiness and Aquaculture	● ●	● ● ★	● ● ★	● ● ★	● ● ★	● ● ★	●
Power	● ●	● ★	● ● ★	● ● ★	● / ● ●	● / ● ●	●
Fisheries	● ●	● ● ★	●	●	● ● ★		
Education	● ●	● ★	●	●			
Food and Beverages	●	● ★	● ★	●	●		
Forestry	● ●	● ● ★	● ★	● ● ★	● ● ★	● ● ★	● / ● ●
Healthcare	●	● ★	● ★	●			
Hospitality	●	● ★	● ★	●	● ★		● ★
Infrastructure	● ●	● ● ★	● ★	● ●	● ● ★	● ● ★	● / ● ●
Manufacturing	● ●	● / ● ● ★	● / ● ● ★	●	●		
Mining	● ●	● ● ★	● ● ★	● ●	● ● ★	● ● ★	● / ● ●
Oil and Gas	● ●	● ● ★	● ● ★	● ●	● ●	● ●	● / ● ●
Pharmaceuticals	●	● ★	● ★	●			
Retail	●	● ★	● ★	●			
Telecoms	●	● ★	● ★	●		●	

Indicative E&S risks and opportunities by sector:

- ● Indicates that this topic can typically generate significant business risks in a sector if not well managed
- Indicates that this topic (i) typically generate less significant business risks in this sector if not well managed and /or (ii) is less frequently encountered in the sector.

Blank Topic very unlikely to be relevant.

★ Indicates significant opportunities to add value in this sector by proactively addressing the topic

Source: CDC E&S checklist

Sustainability in a Business Context

Some investors want or can only finance companies or projects through **green investments**. A 'green investment' must have a positive impact on the environment and society and should not do harm to any of the previously mentioned indicators.



ENVIRONMENT

Reduces/eliminates pollution of air, water, land and/or soil.

Contributes to protection, restoration and/or sustainable management of ecosystem health and resilience.



SOCIETY

Improves health and well-being of its immediate and extended community.

Promotes social equity, builds social capital and enhances the resilience of local communities.



ECONOMY

Creates and sustains decent jobs.

Supports resource-efficient, low-carbon and climate-resilient growth.

Sustainable Impact



The Sustainable Development Goals (SDGs) provide a uniform understanding for impact.

Initially, they were defined for countries, but more and more companies and also investors align their activities with the SDGs.



See all

Tools and How to Get To Know Sustainability in Your Business

Company Name					
Sector Activity					
No.	E&S Risk Category	Response	Description (please provide at least 1-2 sentences to justify your response.)	Risk Category	Risk Response/ Mitigation
Overall Risk Assessment				Low	
1 Society					
1.1 Improves health and well-being of its immediate and extended community					
1.1.1	Product or service actively supports improved health and safety of humans	Yes		Low	Accept
1.1.2	Company has environmental and social management system in place to address potential negative social impacts				
1.1.3	Company ensures the safeguarding of personnel and property is carried out in accordance with relevant human rights				
1.2 Promotes equity, including gender equality					
2.2.1	Balanced gender ratio of employees (full and part time)				
2.2.2	Equal rights afforded to current and prospective employees				
2.2.3	No discrimination against clients for product or service, and preferably gender-focus for products and services				
2.2.4	Company has grievance redress mechanism for employees and customers				
2.2.5	The company will take all reasonable steps to ensure that it does not and will not knowingly provide, material support or resources to any terrorism, bribery, fraud and corruption measures				
1.3 Builds social capital and enhances the resilience of local communities, especially among the poor					
1.3.1	Company has community outreach programme				
1.3.2	Company contributes to social development, particularly for disadvantaged communities				
1.3.3	Company promotes safe and healthy working conditions				
1.3.4	Company ensures that the development process fosters full respect for the human rights, dignity, aspirations, culture, and natural resource-based livelihoods of (Indigenous) Peoples				
2 Environment					
2.1 Reduces/eliminates pollution of some or all of the following: air, water, soil, land					
2.1.1	Product or service directly or indirectly reduces or eliminates pollution				
2.1.2	Company has environmental and social management system in place to address potential negative environmental impacts				
2.1.3	Company has environmental certification (e.g. FSC, MSC etc.)				
2.1.4	Company has a waste management plan				
2.1.5	Company has energy/water efficiency plans in place if applicable				
2.1.6	Company measures green house gas emissions				
2.2 Contribute to protection, restoration, and/or sustainable management of ecosystem health and resilience					
2.2.1	Product or service does not directly or indirectly negatively impact on natural habitats and ecosystems				
2.2.2	Product or service supports ecosystem health and resilience directly or indirectly				
2.2.3	Company does not negatively impact on ecosystem health and resilience				
2.2.4	Company protects and preserves biodiversity, and promotes the sustainable management of living natural resources				

Sustainable Organisations



It is not a trade-off between return and impact, but should be a value proposition of both!

Sustainable Finance

- Private Equity
- Private Debt
- Public investments
- Hybrid debt/ equity
- Mezzanine Capital
- Social impact/ Green / Climate Bonds
- Real Assets
- Pay-for-success instruments
- High networth individuals
- Family Offices
- Banks

Those are not new instruments per se, and there are many old players involved as well.

Yet, different kind of investors join forces, which allows them to make „riskier“ investments compared to before.

Also, problem-solving instruments and blended form of finance are on the rise and achieving the SDGs can not only be financed through public or government institutions.

Drivers range from create impact without a return, to creation of pure financial value with a side effect of impact (not intentional).

Useful Links and References

- EIB Environmental & Social Standards
<https://www.eib.org/en/publications/environmental-and-social-standards-overview>
- IFC Performance Standards on Environmental and Social Sustainability
https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/publications/publications_handbook_pps
- United Nations Convention on Climate Change UNFCCC <https://unfccc.int/>
- Social Development Goals <https://sdgs.un.org/goals>
- Principles for Responsible Investment <https://www.unpri.org/>

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SUSTAINABLE ENERGY INVESTMENTS ARE URGENT



Hurricanes and other severe weather events

Insufficient energy access

High Carbon Emissions

Not sustainable, finite fossil fuels

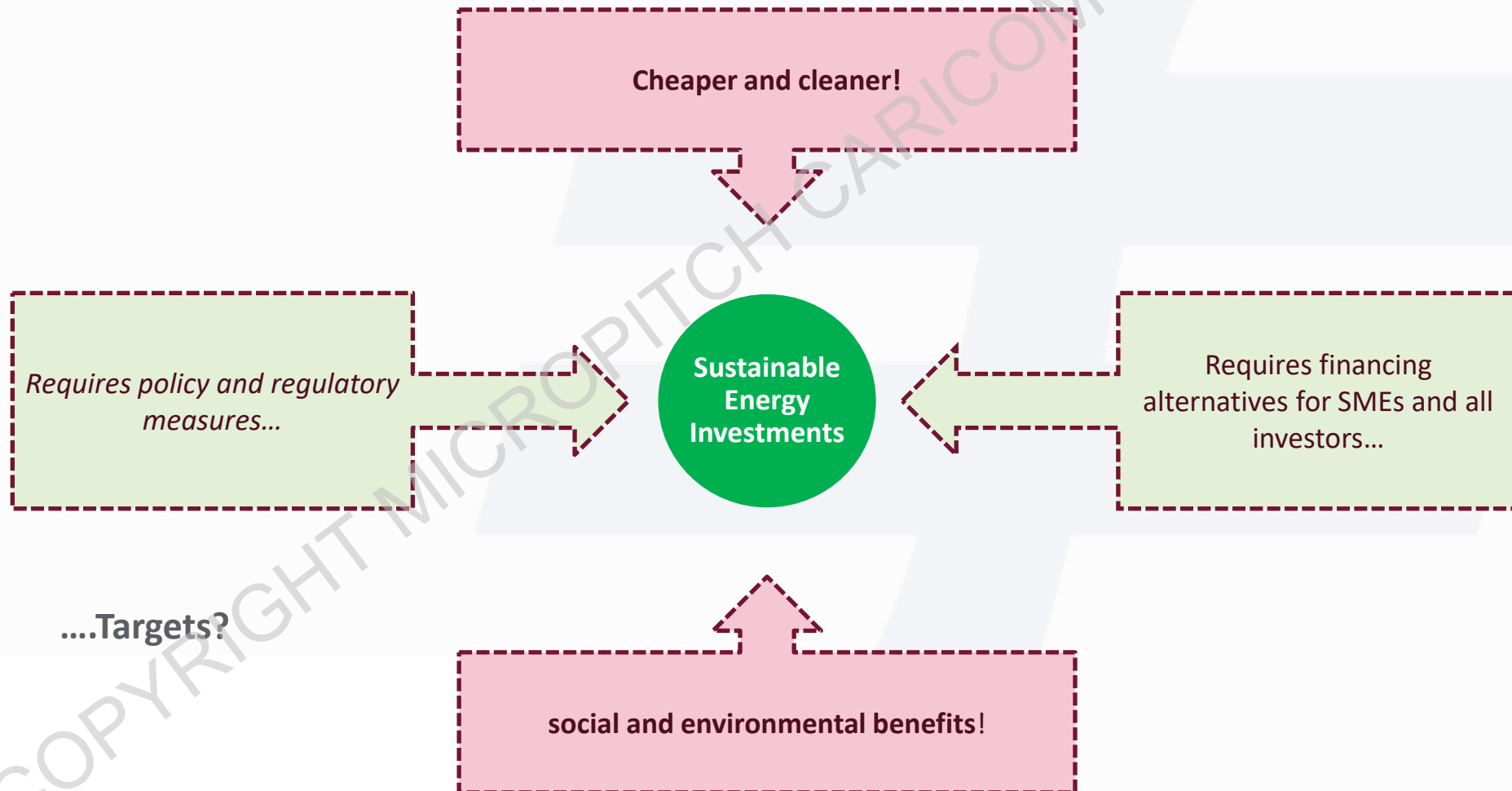
Weak energy supply, energy **insecurity**

Unpredictable energy costs

Poor air quality

Clients are increasingly asking for a change!

SUSTAINABLE ENERGY: BENEFITS AND PRE-CONDITIONS



CARICOM POLICY GOALS

Clean energy targets

- 47% renewable energy for power capacity by 2027
- Power sector CO2 emission reductions of 36% by 2027



Ambitions are high
Progress?



“Build resilient infrastructure, promote sustainable industrialization and foster innovation”



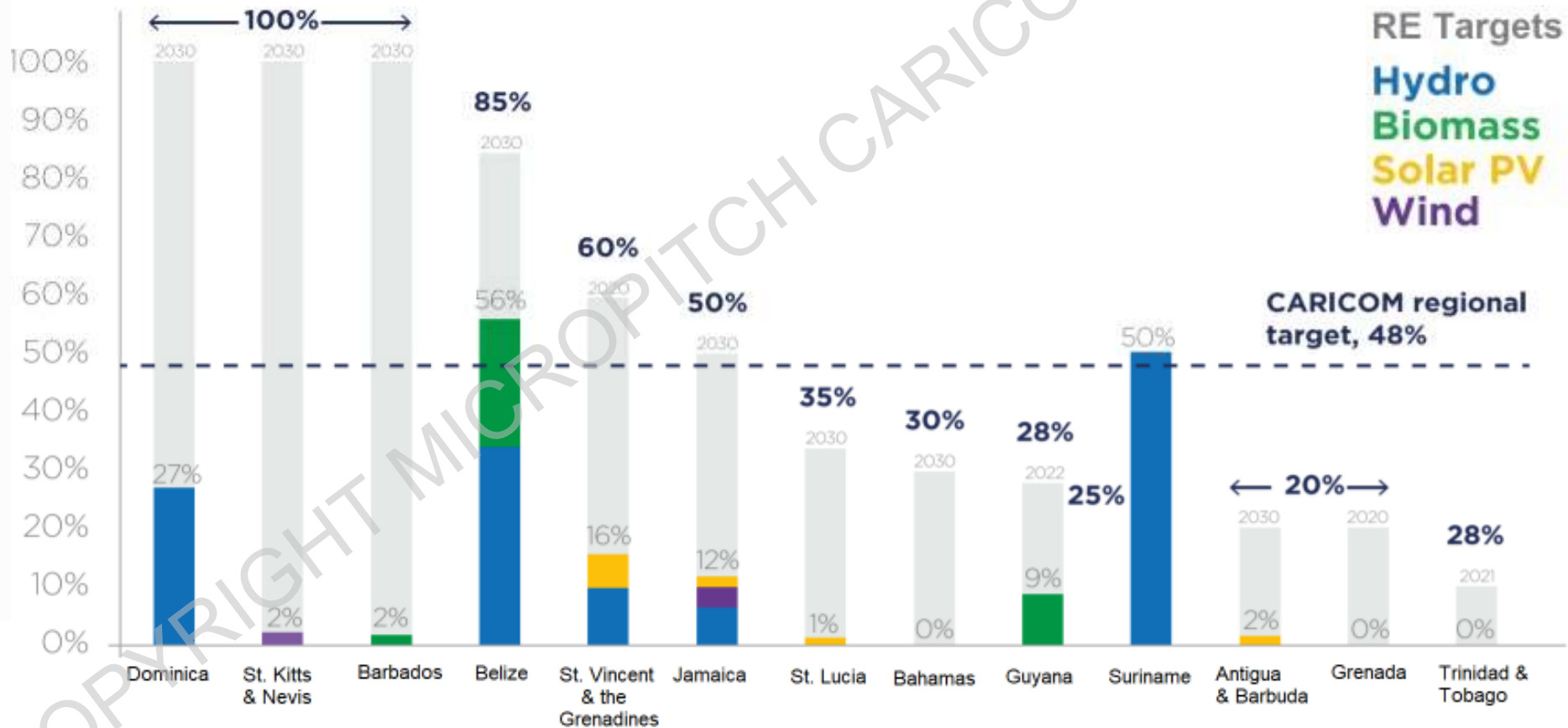
“Ensure access to affordable, reliable, sustainable and modern energy for all”.



“Take urgent action to combat climate change and its impacts”

RENEWABLE ENERGY TARGETS IN CARICOM

National Renewable Energy Ambitions (2019)



INCENTIVES FOR RENEWABLE ENERGIES

COUNTRY	Tax Credits	Feed in Tariff (FiT)	Net Metering (NM)	Net Billing (NB)	Tax Reduction/ Exemption	Interconnection Standards
Antigua & Barbuda	✗	✗	✗	✓	✓	✓
Barbados	✓	✓	✗	✓	✓	✓
Belize	✗	✗	✗	✗	✓	✗
Dominica	✗	✗	✓	✗	✓	✓
Grenada	✗	✗	✗	✓	✓	✓
Guyana	✗	✗	✓	✗	✓	✓
Jamaica	✗	✗	✗	✓	✓	✓
St. Kitts & Nevis	✓	✓	✓	✗	✓	✗
St. Lucia	✓	✗	✓	✗	✓	✗
St. Vincent	✗	✓	✓	✓	✓	✗
Suriname	✗	✗	✓	✗	✗	✓
Trinidad & Tobago	✓	✗	✗	✗	✓	✗

NATIONAL ENERGY EFFICIENCY TARGETS

Country	Energy Efficiency Target(s)
Antigua & Barbuda	10% reduction in energy intensity from 2020 levels by 2023
The Bahamas	None
Barbados	22% reduction in electricity consumption compared to a BAU scenario in 2029
Belize	30% reduction in energy intensity per capita from 2011 levels by 2033 Reduce transmission and distribution losses to 7% by 2030
Dominica	Reduce system losses to 10% by 2020 20% reduction in public sector electricity consumption by 2020
Grenada	None
Guzana	None
Jamaica	71% reduction in energy intensity from BAU scenario by 2030
Saint Kitts & Nevis	20% reduction in peak demand
Saint Lucia	20% reduction in public sector consumption by 2020
Saint Vincent & the Grenadines	15% reduction in electricity generation from BAU scenario by 2025 5% reduction in system losses by 2020
Suriname	None
Trinidad & Tobago	None

DESCRIPTIONS OF ENERGY EFFICIENCY MEASURES

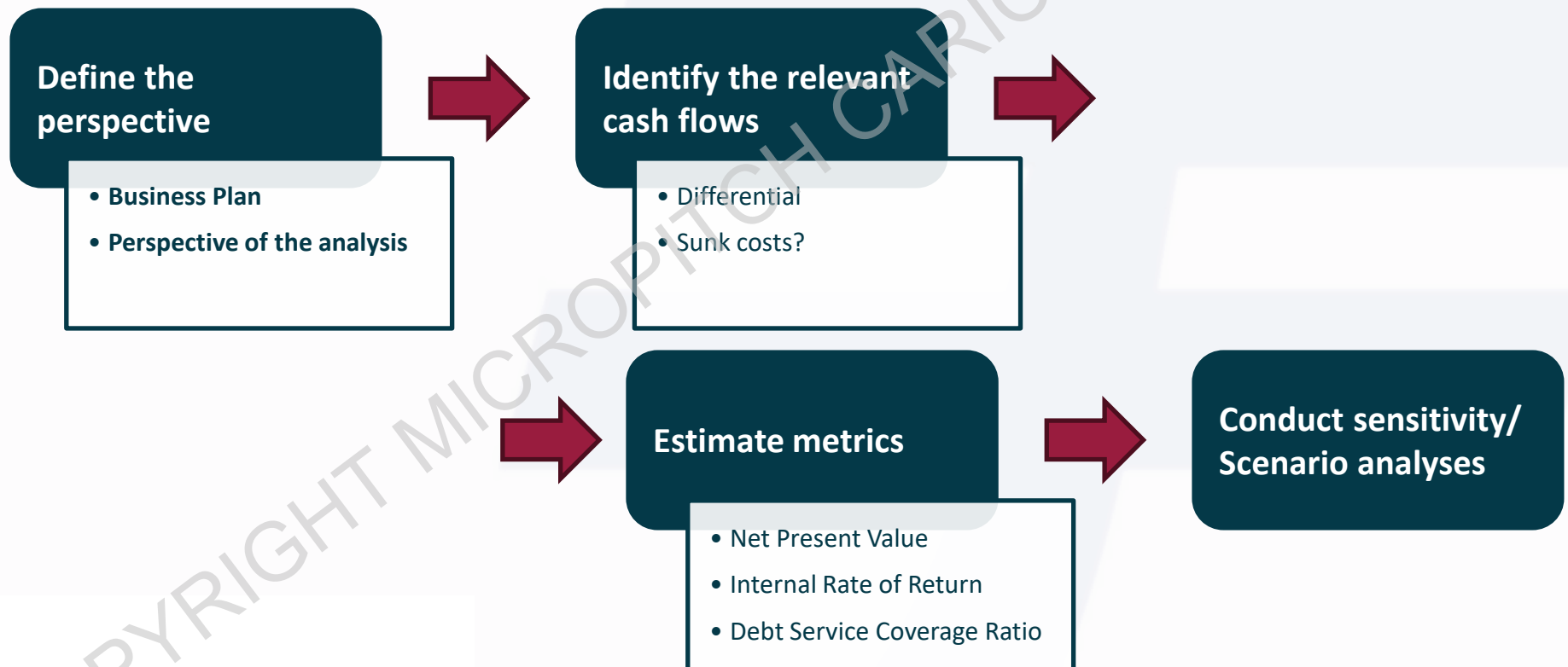
Energy Efficiency Measure	Description
LED Lightning	Replace incandescent, fluorescent, or compact fluorescent light fixtures and bulbs with high-efficiency LED lightbulbs.
High-efficiency new construction	When constructing new buildings, incorporate passive (e.g., daylight autonomy, passive ventilation) and active (high-efficiency cooling, displacement ventilation) high-efficiency design elements to improve total building performance.
Cooling: reduce infiltration on louvered windows	Apply air sealing to reduce infiltration on louvered windows (or leaky doors/windows) to reduce cooling energy and peak air-conditioning load.
Ceiling fans to augment AC	Install ceiling fans to improve human comfort at higher indoor air temperatures, reducing air-conditioning energy consumption.
Lighting/HVAC automation/controls (i.e., motion sensors)	Install sensors and controls to efficiently operate lighting and HVAC systems depending on occupancy (i.e., using occupancy sensors or motion sensors); automate lighting and HVAC schedules.
Replace split AC units with inverters	Replace split air-conditioning units with higher-efficiency units at end of life. (Higher-efficiency models use inverters to speed-control the air-conditioning compressor and use higher-efficiency electro-commutated motors for the evaporator and condenser fans).
Replace MH/HPS high bay lamps with LED	Replace metal halide and high-pressure sodium (MH/HPS) high bay lamps with LED options to reduce lighting power use and air-conditioning energy use.
Efficient residential refrigerators	Replace conventional residential freezers and refrigerators with Energy Star-certified models.
Daylighting controls	Install sensors and controls to make efficient use of daylight to reduce electric lighting.
Paint concrete walls beige or yellow (abs. = 0.55)	Paint exterior concrete walls with low-albedo paint (usually beige or yellow, with solar absorption <0.55) to reduce cooling energy and peak air-conditioning load.



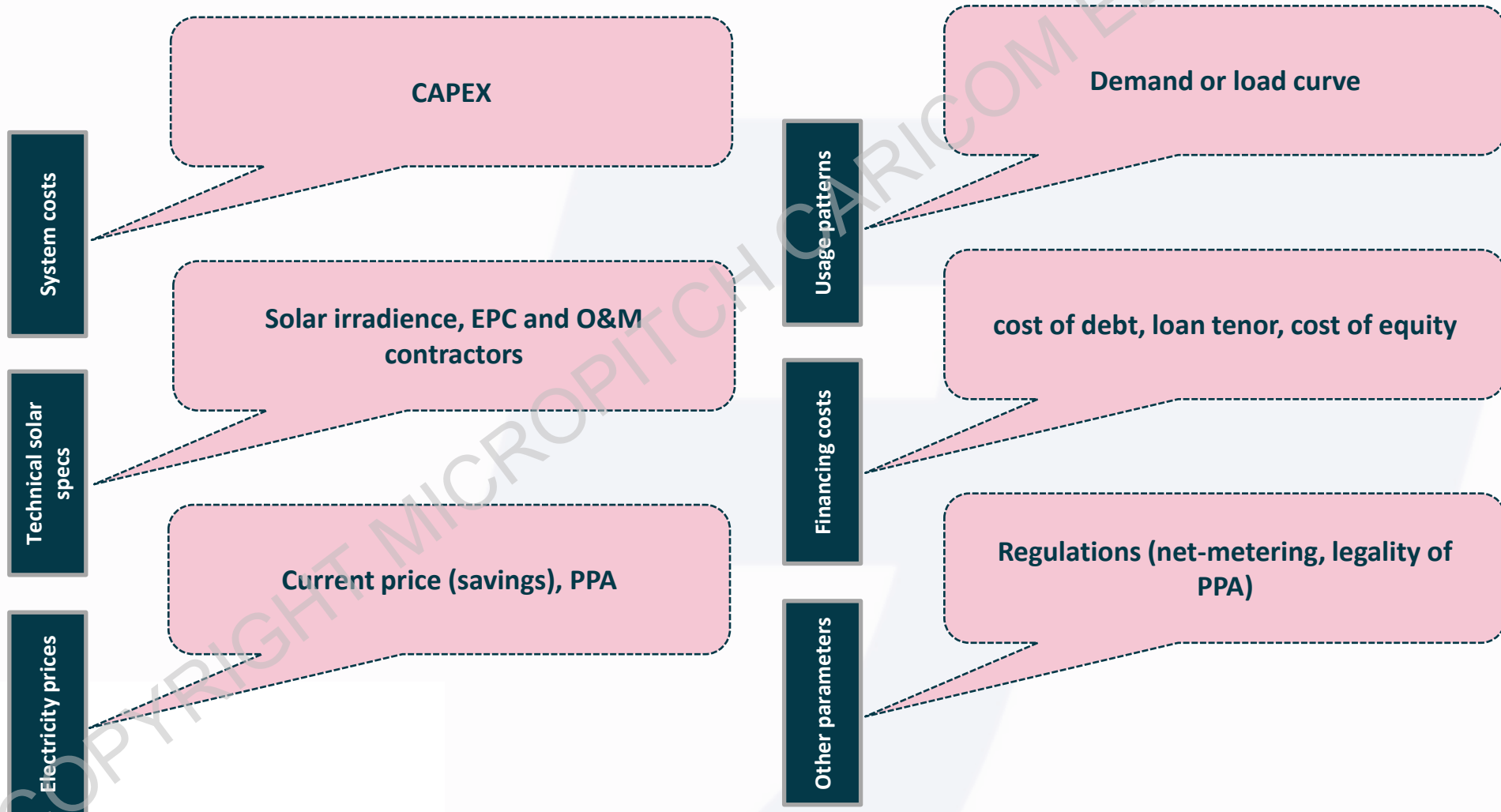
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SUMMARY OF STEPS TO FOLLOW TO ASSESS PROJECT PROFITABILITY



IMPORTANT INPUTS





THE FINANCIAL MODEL

Input Sheet

1. Assumption for grid electricity

- Electricity prices

2. Assumption for solar system

- System assumption
- System usage

3. CAPEX and OPEX assumption

- System costs per KWp
- Replacement CAPEX
- Depreciation

4. Financing assumption

- Cost of equity and debt
- Loan tenor
- Corporate tax

5. Other assumptions

- CO₂ emission savings

6. Solar Production profile

Output Sheet

▪ IRR (Project and Equity)

▪ NPV of cash flows (Project and Equity)

▪ LCOE

▪ Simple payback period

▪ CO₂ emission savings

Sensitivity sheet

Dynamic Investment Calculation vs. Static Investment Calculation

Different approaches can be used to assess investment opportunities

Dynamic Investment Calculation

The common denominator for all dynamic investment calculations is that they **take into account the time value of money**.

Example

- Net Present Value (NPV)
- Internal Rate of Return (IRR)

Static Investment Calculation

Static investment calculation methods are those that do not take into account the time value of money.

Example

- Payback period



Concept of Time Value of Money

€100 received today is worth more than €100 received in the future

Proof using PV/FV formula:

$$FV_n = PV(1 + r)^n$$

PV = Present Value

r = Interest rate for the specified period

n = number of periods

FV_n = Future Value after n periods

POLL

What is the PV of €100 received 1 year from now? More or less than €100? Assume 10% interest rate.

Projects	PV	FV
A	100	
B		100
Rate	10%	10%

Net Present Value (NPV)

NPV is the difference between present value of inflows and present value of outflows

NPV formula:

$$NPV = -I_0 + \sum_{t=1}^n \frac{CF_t}{(1+r)^t}$$

I_0 = Initial Investment at time 0

t = Time periods

n = Total number of periods

CF_t = Cash flows at each period

r = Discount rate of investment

NPV-based decision rules:

Accept investments that have a positive NPV ($NPV > 0$)!

POLL

What investment would you prefer: A, B & C?

				Rate	10.0%
Project	C0	C1	C2	C3	NPV
A	-2,000	500	300	2,000	
B	-2,000	800	1800	0	
C	-2,000	1,800	400	300	

Internal Rate of Return (IRR)

IRR is the discount rate which makes the NPV of the project exactly equal to 0

IRR-based decision rules:

- Accept investments that offer internal rates of return in excess of the **benchmark or hurdle rate!**
- If you compare two investment opportunities, choose the one with the highest IRR!

POLL: Calculation 2: Would you invest in this project?

Yes/no

	2020	2021E	2022E	2023E
Project cash flows	-100.00	10.00	40.00	110.00
Discount rate	10%			

Simple payback period

Time required for the project cash flow to cover the initial investment

Simple payback period calculation methodology:

Compare the cash outflow in the first time period with the cash inflows in the following periods (without considering any time value of the cash flow). The payback period is then the moment when the sum of cash inflows is equal to the initial investment

Simple payback period decision rule:

- Choose investments with the shortest payback period!
- Or, choose the project if its payback period is less than a specified “cut-off period” of X years.

POLL: What is the Simple Payback Period of the Projects? What investment would you prefer: A, B & C?

Project	Co	C1	C2	C3	Payback Period	NPV at 10% rate
A	-2,000	500	300	2,000		
B	-2,000	800	1800	0		
C	-2,000	1,800	400	300		

SOLAR PROJECT



+ Savings	Calc	\$	
Average	Calc	\$/kWh	
OPEX per kWp	Feed	\$/kWp	
- OPEX	Calc	\$	
% over revenues	Calc	%	
= EBITDA	Calc	\$	
- Amortization	Calc	\$	
= EBIT	Calc	\$	
Tax Rate (30%)	Input	%	
- Taxes	Calc	\$	
= Net Benefit	Calc	\$	
+ Amortization	Calc	\$	
- Investment in Fixed Assets	Calc	\$	28,161
+ Residual Value			
= Free Cash Flow (FCF)	Calc	\$	-28,161

Economic analysis of a project

Variables	Source	Unit	Valor
Size of PV	Input	kWp	21
Construction Date	Input	12/31/YYYY	2021
Investment accounting life	Input	years	15
pv lifetime	Input	years	20
CAPEX	Feed	\$/kWp	1,341
Equivalent hours per year (mature stage)	Feed	Hours	2,628
Equivalent hours per year (maturation stage)	Feed	Hours	2,628
% Debt	Input	%	80%
% Equity	Input	%	20%

Estimated inflation rate	2.00%
Taxes	30.00%
Estimated CPI	2.00%
savings	\$/kWh 70

IRR 8.82%
NPV 6,220



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KEY ELEMENTS TO IMPLEMENT SUSTAINABLE PRACTICES IN SMES

Strategy & Planning

☐ Take a broad view of sustainability

☐ Key sustainability drivers and opportunities

☐ Define in detail what sustainability means to your company

☐ Clear success measures

☐ Engage all stakeholders

☐ Customers, suppliers, investors and employees

Execution & Alignment

☐ Remember that you are not alone

☐ Worldwide initiatives to help your business to become more sustainable

☐ Establish responsibility and communicate widely

☐ Senior management to drive the policies

☐ Take it step by step

☐ Small changes for a significant future

☐ Walk the talk

☐ Meaningful actions avoiding greenwashing

Performance & Reporting

☐ Tie sustainability to profit

☐ Becoming more sustainable often means being more efficient (environment – costs)

☐ Measure, monitor and review

☐ Clear metrics development and track the progress

☐ Invest in the future

☐ Biggest investment is management time

Thank You!

