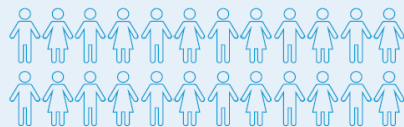




***Considerations in the Transfer and Diffusion
of Clean Technologies into Asia***

Need and Opportunity for Cleantech in Asia

ASIA NEEDS CLEANTECH SOLUTIONS



Asia and the Pacific is home to **4.4 billion people**

(UNESCAP)



About **44 million people** are being added to Asia's urban population every year. That is equivalent to **120,000 people** a day.

(ADB)



700 million people in Asia have no access to electricity.

(ADB)

By 2025



750 million people in Asia will be at risk from inland and coastal flooding.

(ADB)

By 2030



Agriculture will need to produce **60% more food** globally and **100% more** in developing countries using diminishing water resources.

(ADB)

By 2035



Asia will have more than **1 billion vehicles**

(Clean Air Asia)

As much as **80% of air pollution** in Asia's cities are already attributable to transport.

(ADB)

Asia will emit **20 billion tons of CO₂** representing **46%** of the planet's emissions



and



Consume **54% more energy**.

(BP Outlook)

By 2050

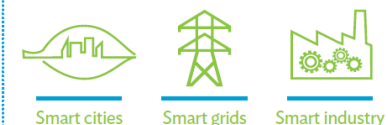
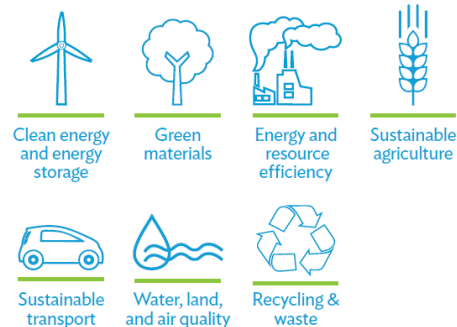
88% of Asia's population will experience water scarcity.

(ADB/IIASA)



CLEANTECH IS A BIG NEW MARKET OPPORTUNITY

Cleantech refers to innovative technologies, products, and services that enable the more efficient use and management of energy and natural resources, reducing waste while providing superior performance at lower or comparable costs. It covers:



New disruptive innovations are unlocking new big cleantech markets

\$1.3 trillion

Global market for clean technologies by 2020

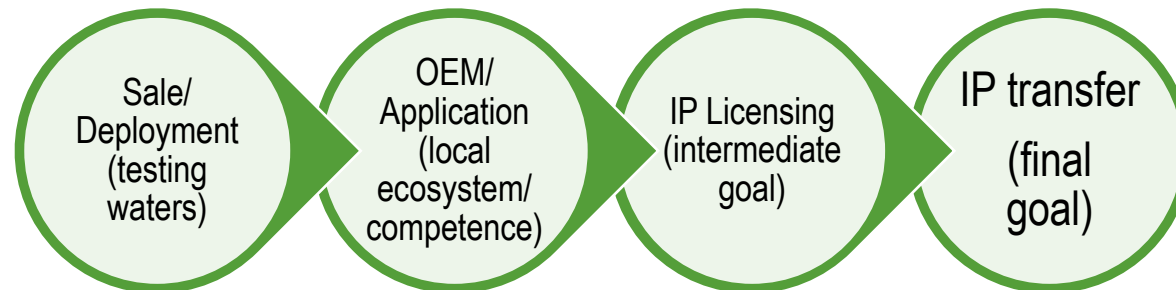
(Frost & Sullivan)

\$640 billion

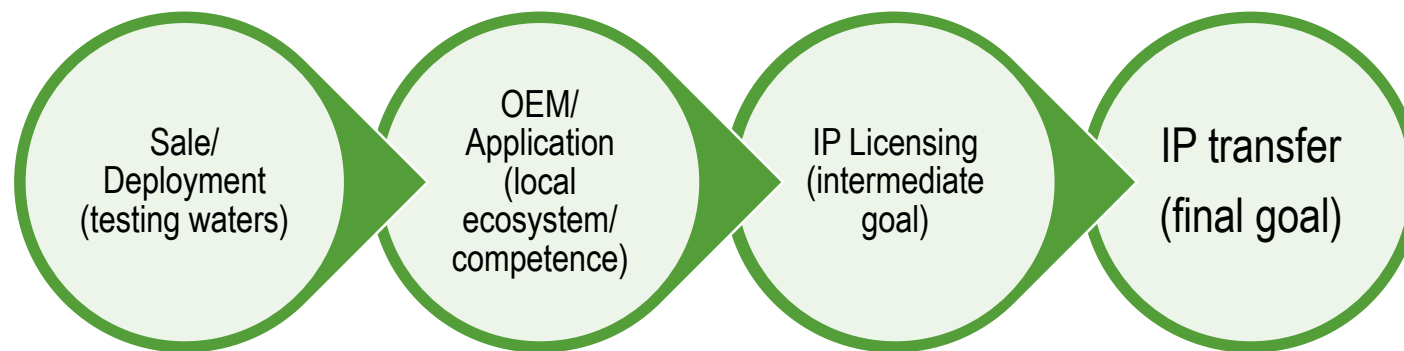
Annual market for clean technologies in developing countries in the next 10 years.

(World Bank)

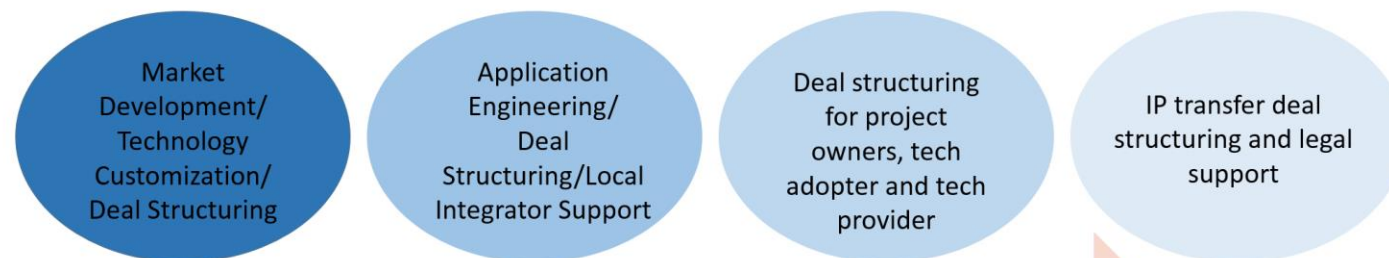
Application Areas for Clean Technologies



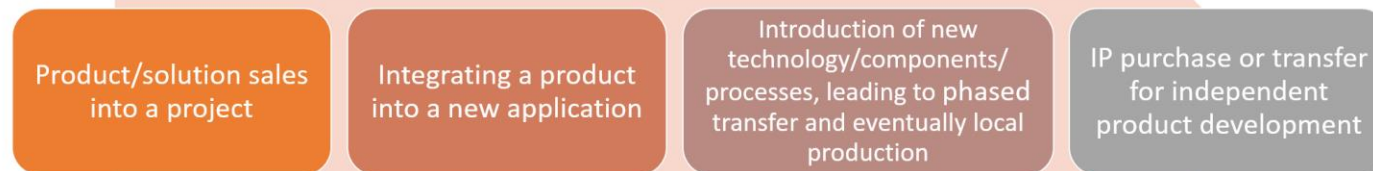
Technology Transfer Eco-System



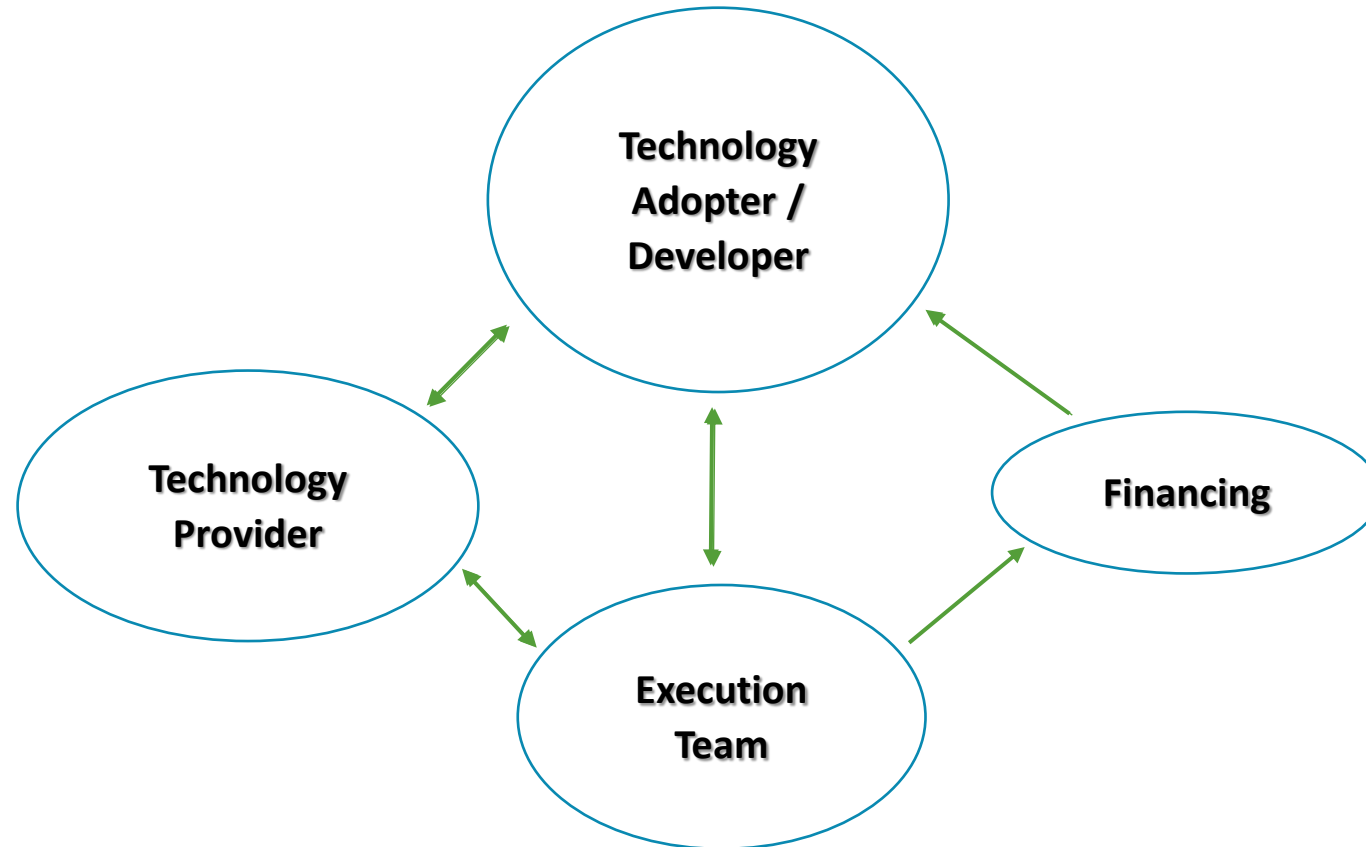
KEY DEAL FACILITATION WRAPAROUND SERVICES



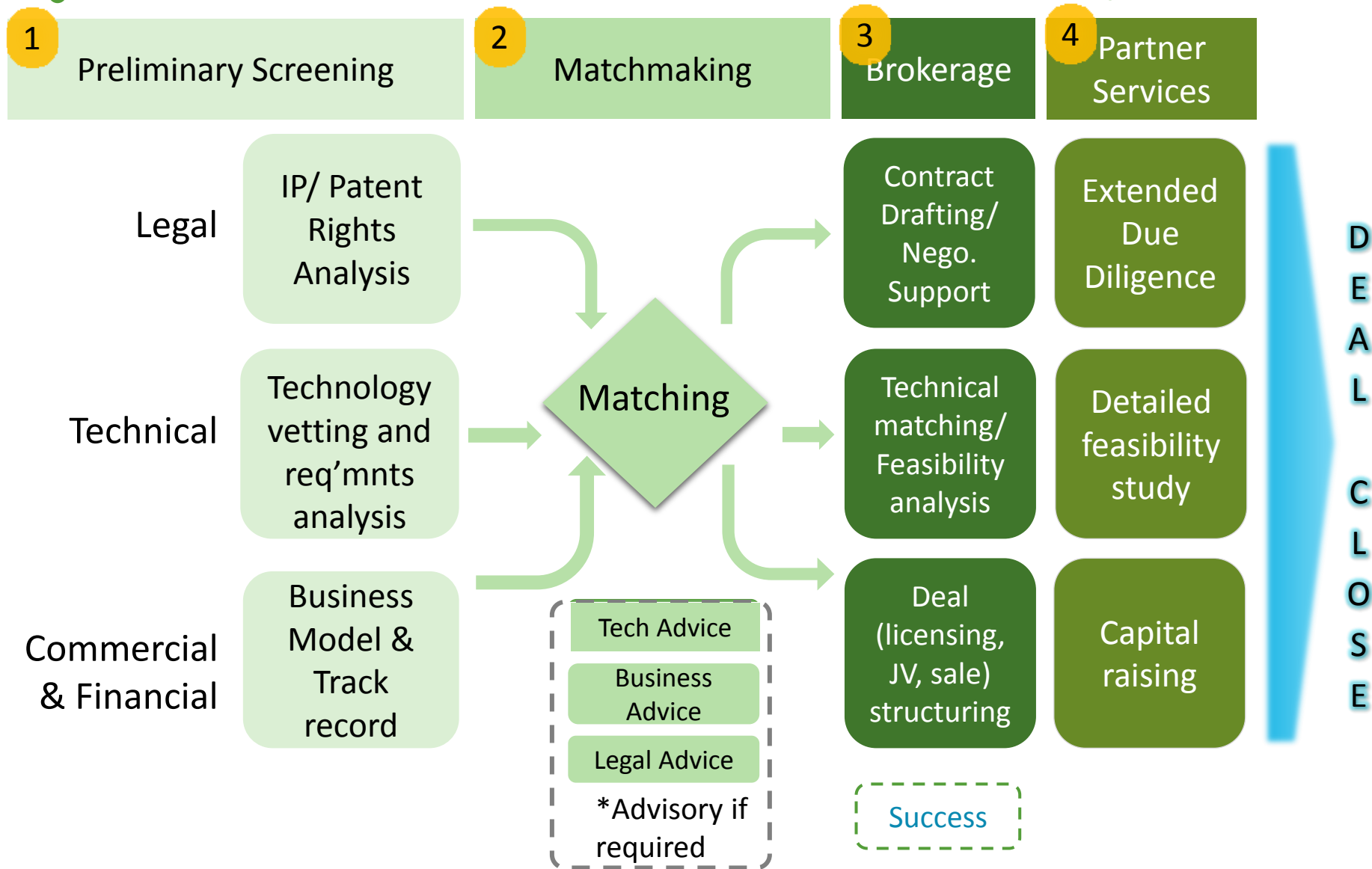
MULTIPLE PATHWAYS IN TECH TRANSFER



Clean Technology Deployments – Key Actors



Cleantech Deal Processes



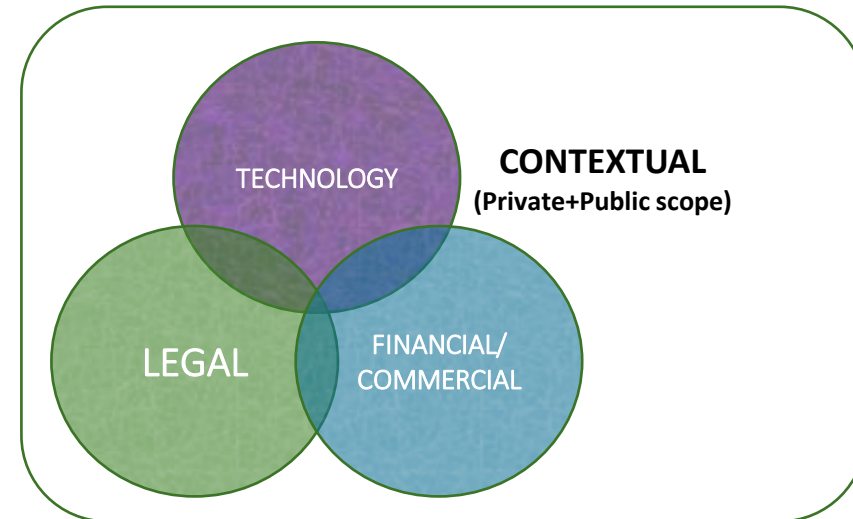
Challenges of LCT Transfer @ Developing APAC

- Operational:

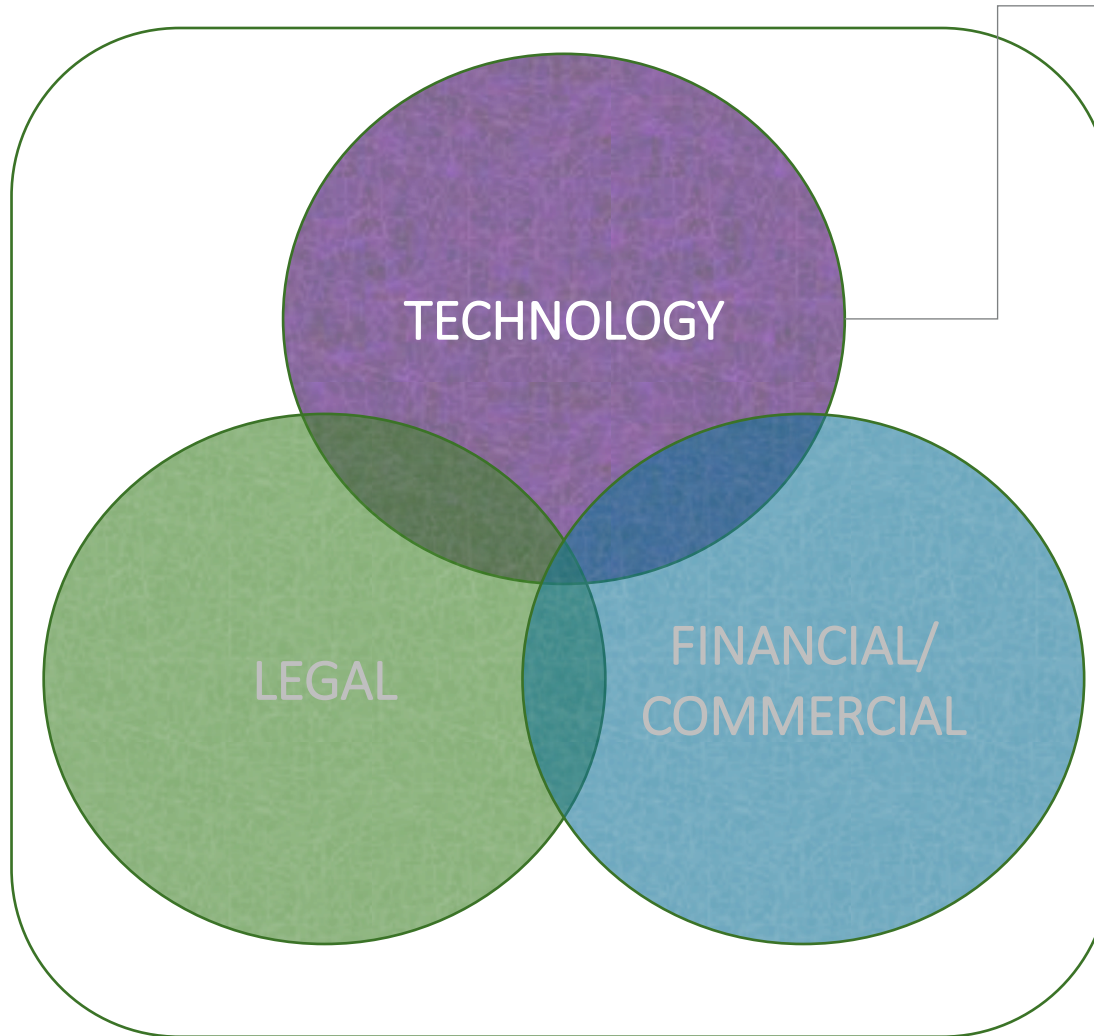
- Viewed as a cost center
- Building and retaining regional partnerships

- Ecosystem

- Technology adopters / project developers
- Technology providers
- Regulatory / bureaucracy
- Funding
- Technology providers want to sell products but not transfer IP



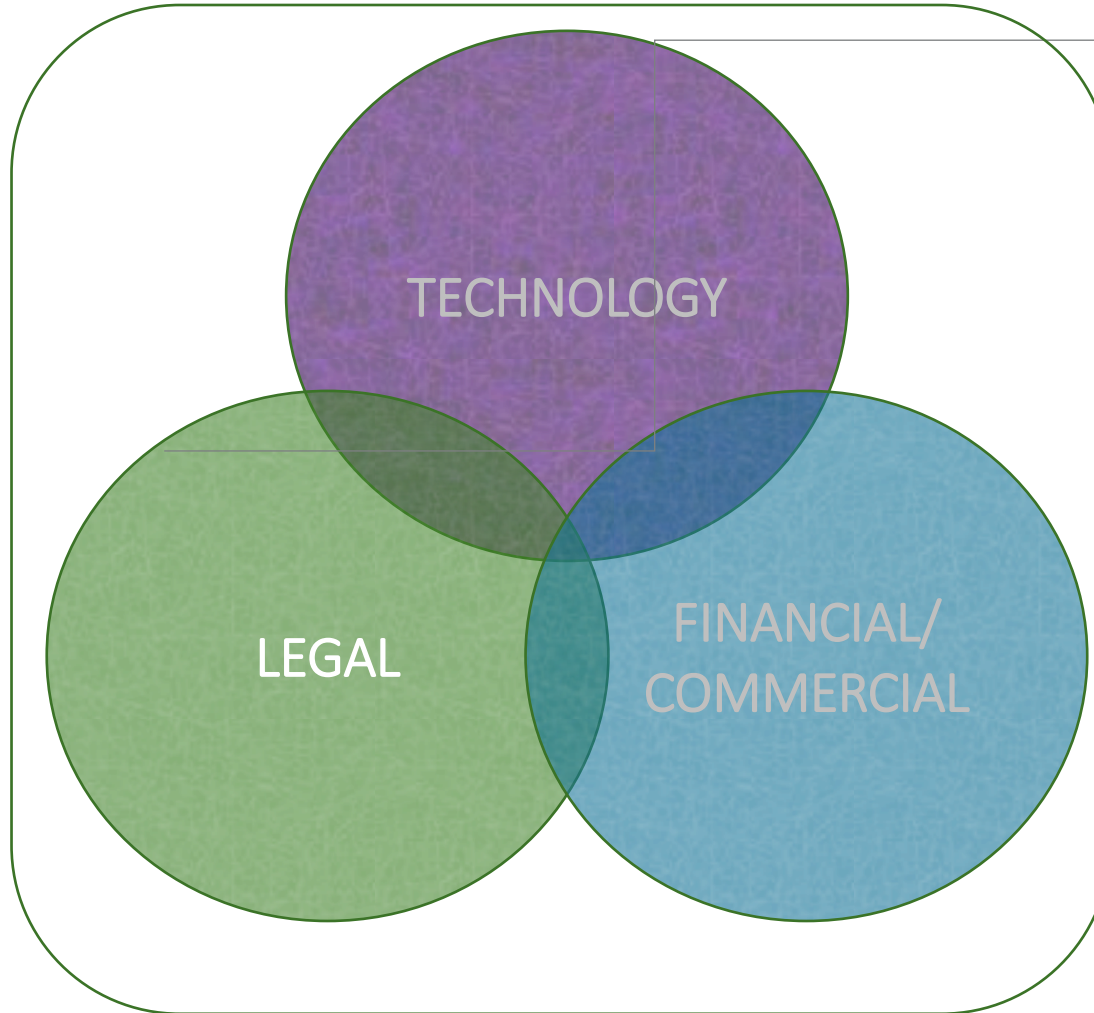
Technology Challenges in LCT Projects



Challenges in Technology

- **Perception**
 - Seen as too advanced hence costly
 - Doubts on useful adaptation and localization process
- **Lack of demonstrated tropicalized technologies references**
 - E.g. waste-to-energy in India
- **Interoperability**
 - E.g. EE → system or retrofits
- **Technology needs and unequal demand –supply of solutions**
 - Economics are a key (impetus to respond and act e.g. carbon price)
- **Translation of a myriad of needs**

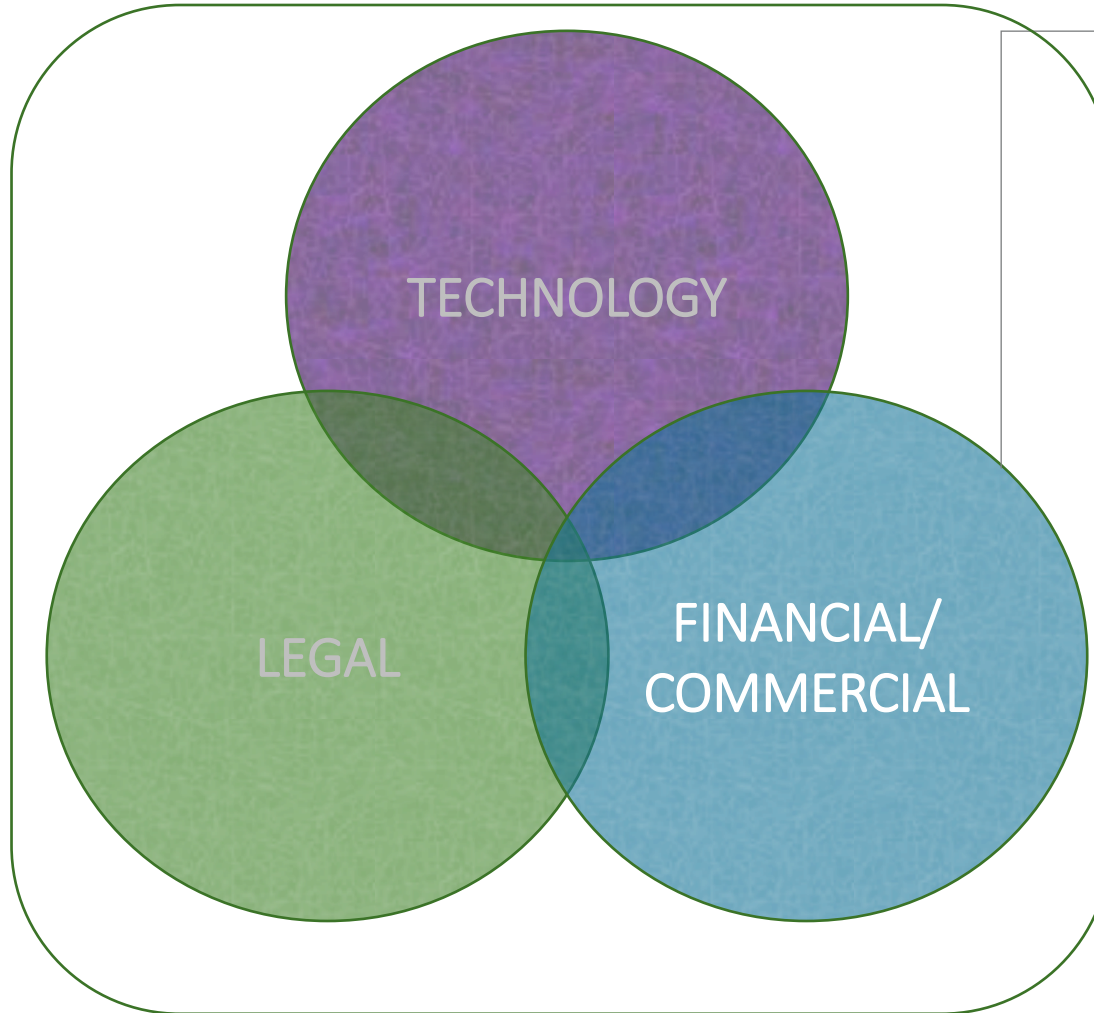
Legal and Regulatory Challenges in LCT Projects



Challenges in Legal

- **Know-how protection**
 - E.g. Intellectual Property rights
- **Local policies and regulations**
 - Varying soft and hard legal rules in developing countries
- **Lack of transaction structuring and framework**

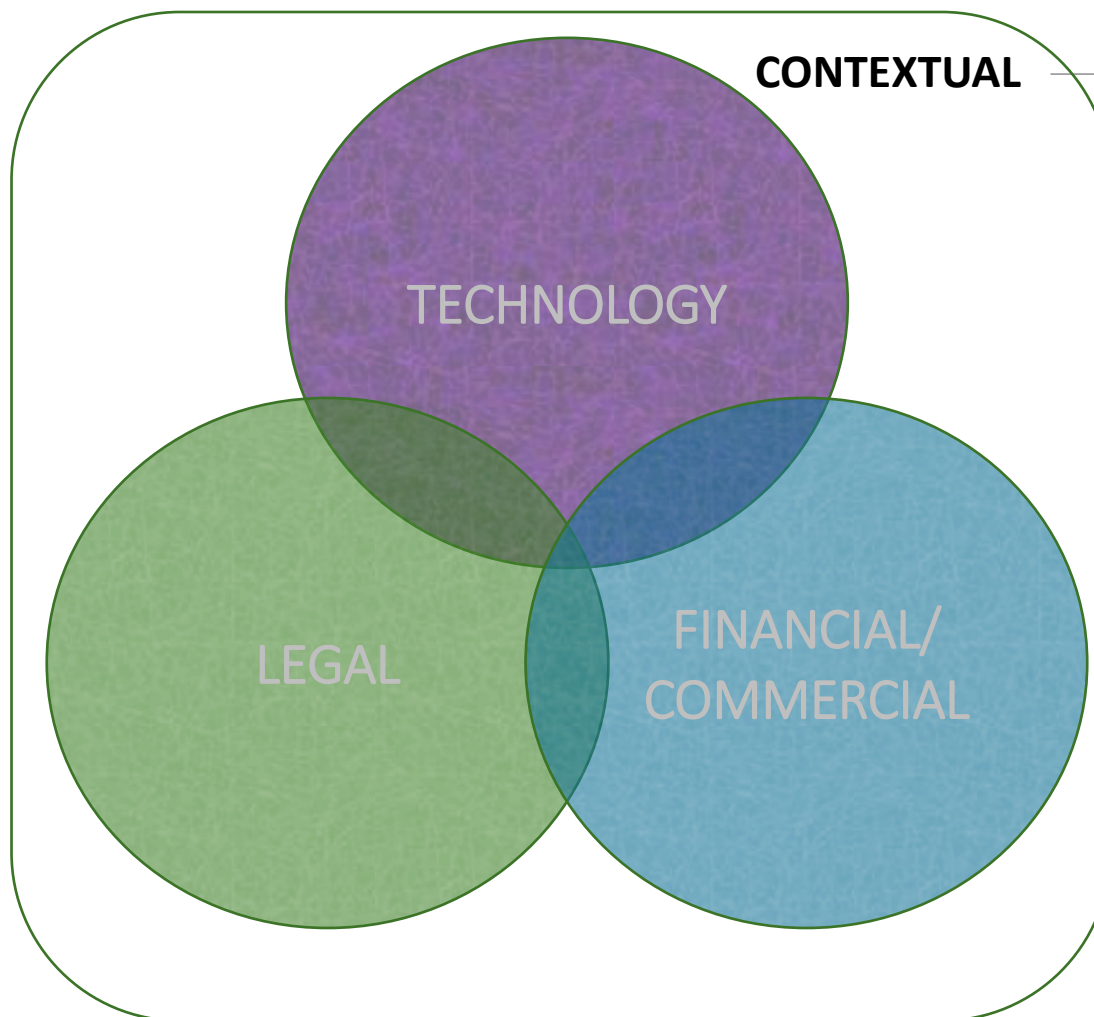
Financing Challenges in LCT Projects



Challenges in Financial

- **Investor preference for later stage financing**
 - Small appetite for early-stage technologies
- **More than a partnership of two with different risk aptitudes**
 - E.g. Solution Providers, Adopters/End-users and System Integrators
- **Fear of inability to recover capital**
- **Investor unfamiliarity with cleantech**
- **Lack of good quality cleantech deals**

Contextual Challenges in LCT Projects



Contextual Challenges

- **Cultural differences**
 - More willingness to pay for a physical product versus an informed opinion
- **Actual and perceived risks of foreign technologies**
- **Climate change/ energy is NOT an issue on its own without effective regulation**
- **Energy issue is also a social, developmental, economic and political issue**

THANK YOU

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