ICLEI Local Governments for Sustainability

100% RENEWABLES CITIES & REGIONS ROADMAP

Supported by:

Federal Ministry for Economic Affairs and Climate Action

IKI INTERNATIONAL CLIMATE INITIATIVE

on the basis of a decision by the German Bundestag

Capacity Building Module:
Renewable Energy Project Development

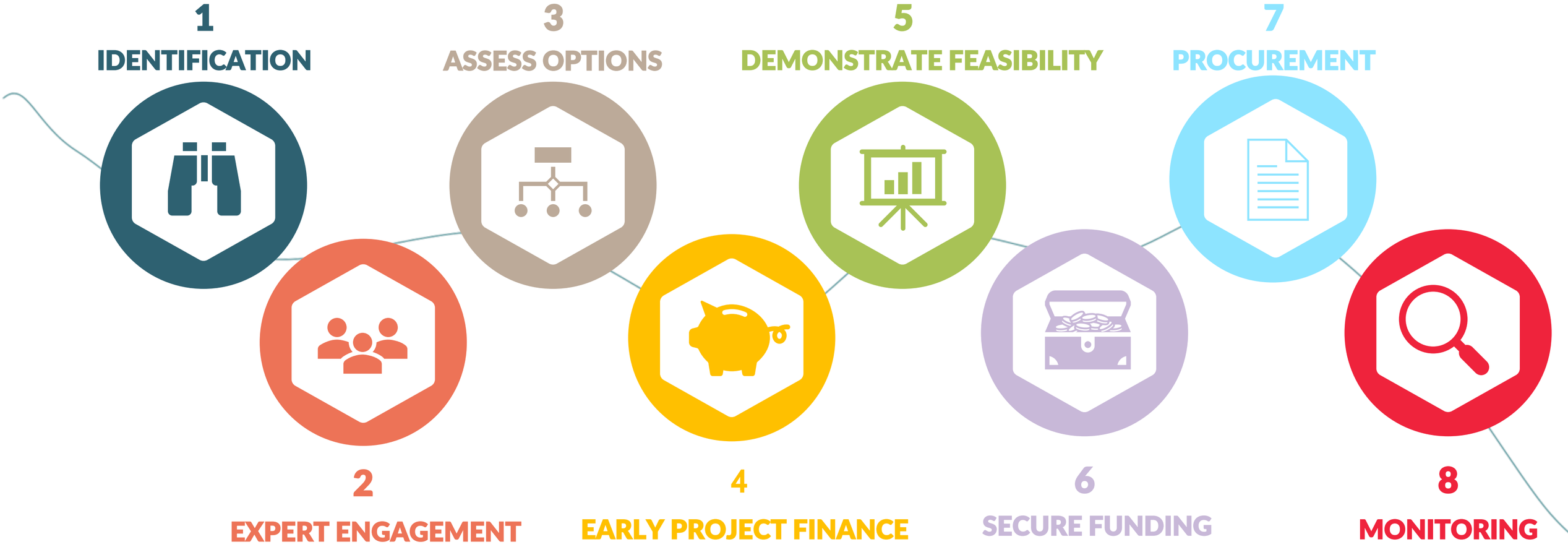
CONTENTS

INTRODUCTION

PROJECT DEVELOPMENT OVERVIEW

OVERVIEW OF PROJECT DEVELOPMENT

8 STAGES



KEY ROLES FOR PROJECT DEVELOPMENT LIFECYCLE (1 OF 2)

100% RENEWABLES CITIES & REGIONS ROADMAP

1
IDENTIFICATION

Identify projects based on LG's needs

2
EXPERT ENGAGEMENT

Engage the right experts to assess options

3
ASSESS OPTIONS

Quantify the benefits of each option and assess which options are affordable. Identity a preferred option

4
EARLY PROJECT FINANCE

Secure financial commitments from LG and National Government. Engage with other development partners

PROJECT MANAGER

CONSULTANT TEAM (technical and financial experts)

LG's CHIEF FINANCIAL OFFICER

NG

DFIs

KEY ROLES DURING PROJECT DEVELOPMENT (2 OF 2)

5
DEMONSTRATE FEASIBILITY

Conduct detailed technical and financial studies to conclude on affordability

6
SECURE FUNDING

Formalize funding commitments with legal contracts or via LG/NG budgets

7
PROCUREMENT

Appoint private sector partner (if PPP) via tender process. Procure EPC contractor if public owned, and SLA partner if operated by the private sector

8
MONITORING

Monitor performance of private sector against contractual obligations. Report on KPIs

PROJECT MANAGER

Consultant Team (Various Experts)

LG's Chief Financial Officer + Executive

NG

DFIs

LG's Legal/Compliance Team

Equipment Suppliers

Construction Company

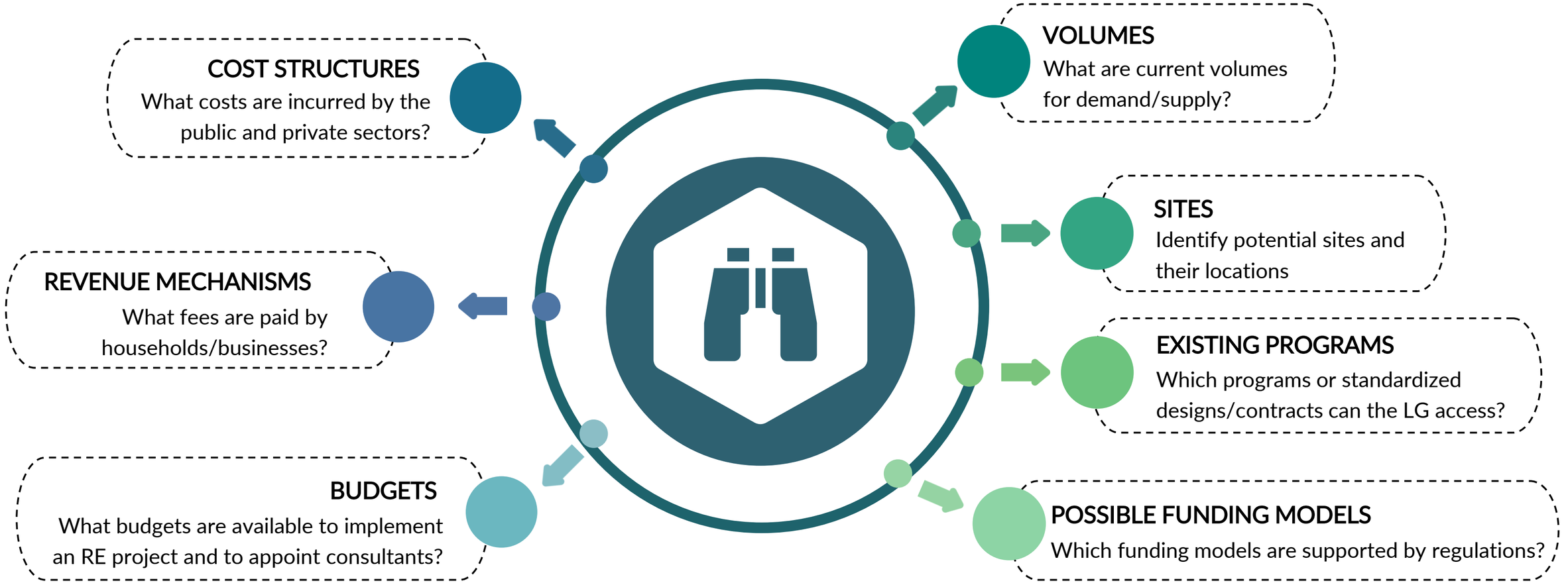
Operator

PHASE 1

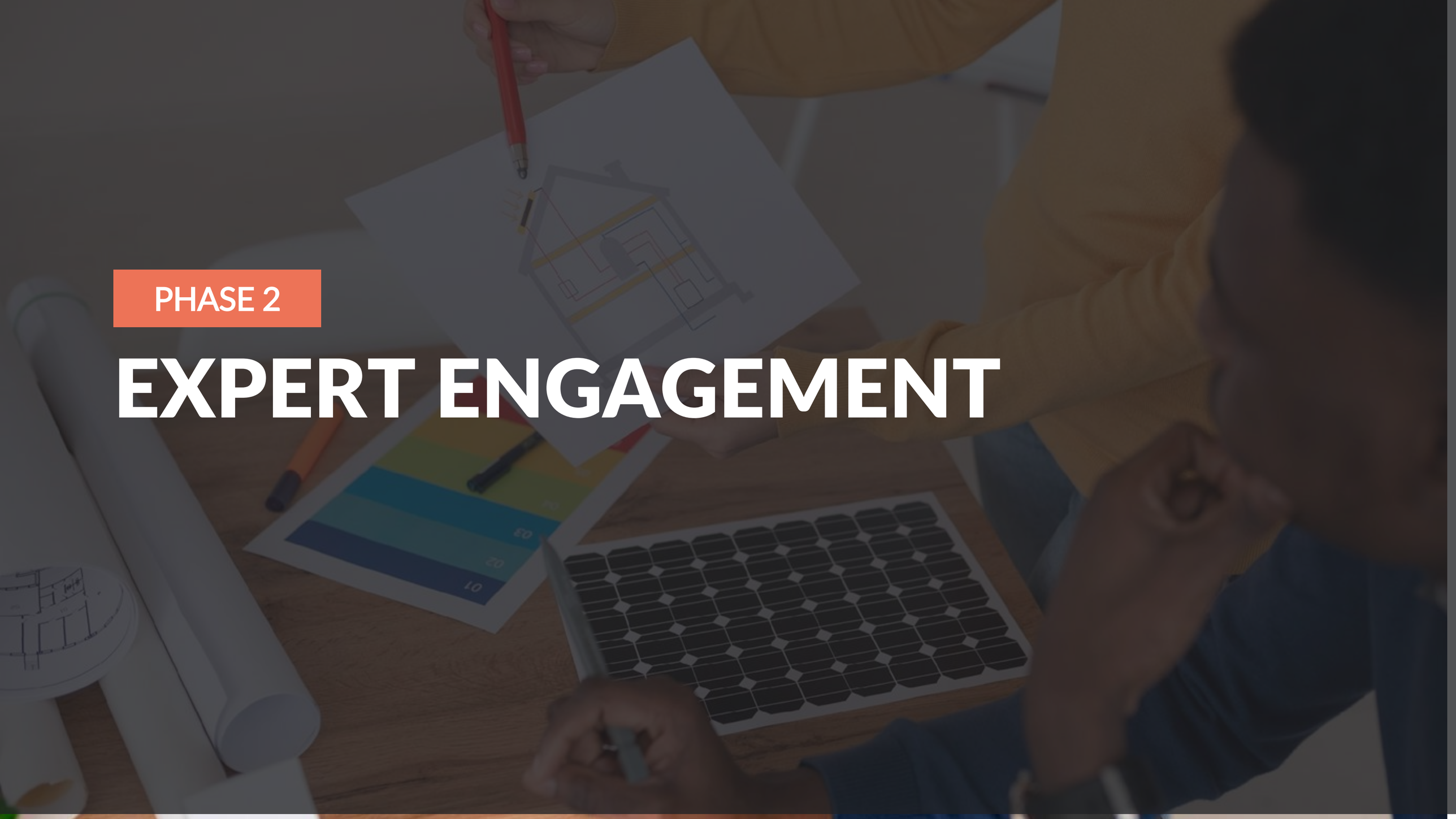
IDENTIFICATION

DETAILS ON STEP 1: IDENTIFICATION

The Project Owner needs to unpack the LG's needs and status quo by answering the following questions:



Insight/example: In reality, many of the responsibilities listed above are often passed onto experts. Undertaking these steps upfront will allow LGs to better scope work to be undertaken by experts and reduce expert costs.



PHASE 2

EXPERT ENGAGEMENT

DETAILS ON STEP 2: EXPERT ENGAGEMENT

How to engage the right experts:

FACTORS TO CONSIDER

- Budgets available to hire experts
- LRG's internal capacity
- Complexity of project
- Capacity to develop ToR
- Availability of local experts

TERMS OF REFERENCE (ToR)

- Seek support from development partners with ToR development
- Specify minimum skills and track record requirements
- Consider how requirements will be scored/evaluated
- Clearly define deliverables, timelines and payment milestones

EVALUATION & APPOINTMENT

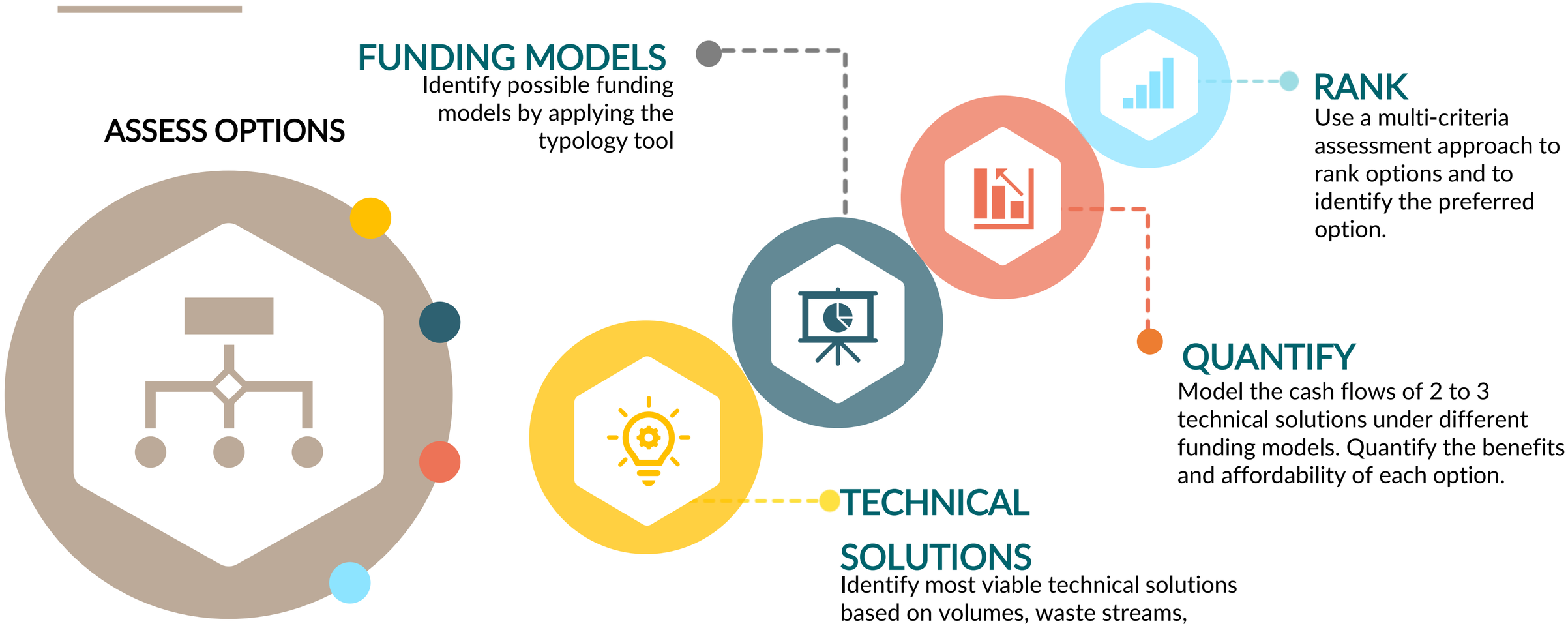
- Development partner could form part of evaluation committee
- Develop scoring matrix to evaluate bids
- Communicate outcome of evaluation to bidders
- Finalize contract

Insight : If limited budgets are available to appoint consultants, the LRG may want to adopt a phased appointment approach. A LRG can include a break clause in the contract and require consultants to price the different phases/deliverables separately.

PHASE 3

ASSESS OPTIONS

DETAILS ON STEP 3: ASSESS OPTIONS



PROJECT MANAGER

CONSULTANT TEAM (Technical And Financial Experts)

ASSESS OPTIONS: IDENTIFYING FUNDING MODELS

APPLY THE TYPOLOGY TOOL

Project fundamentals	Low = 0	Medium =3		High = 5
Revenue certainty				
Ability to mitigate operational risks				
Ability to manage Capex risks				
Acceptance of technology risks				
Ability to manage environmental/social risks				
Access to credit enhancement				
Average				
Generic funding mechanisms	Grants (Govt + ODA)	Blended finance, impact investment	PPP + grant /blended finance	PPP, project bonds
Climate funding mechanisms	Grants	Concessionary loans + grants		Green bonds, equity

UNDERSTAND REGULATORY ENVIRONMENT

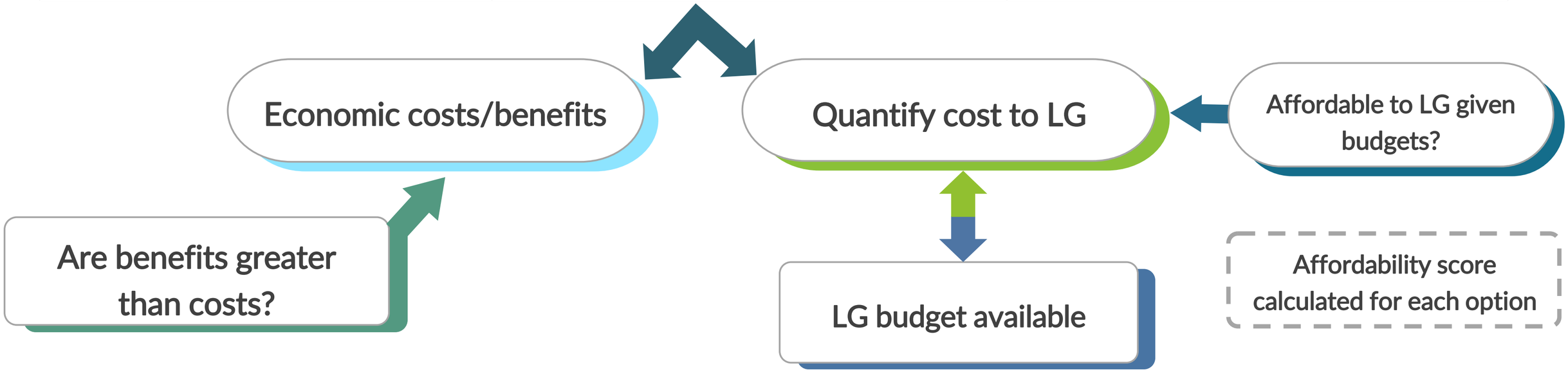
Identify funding models based on the project's revenue and risk profiles

Eliminate funding models that are not supported

CONFIRM MOST SUITABLE FUNDING MODELS

ASSESS OPTIONS: QUANTIFYING OPTIONS

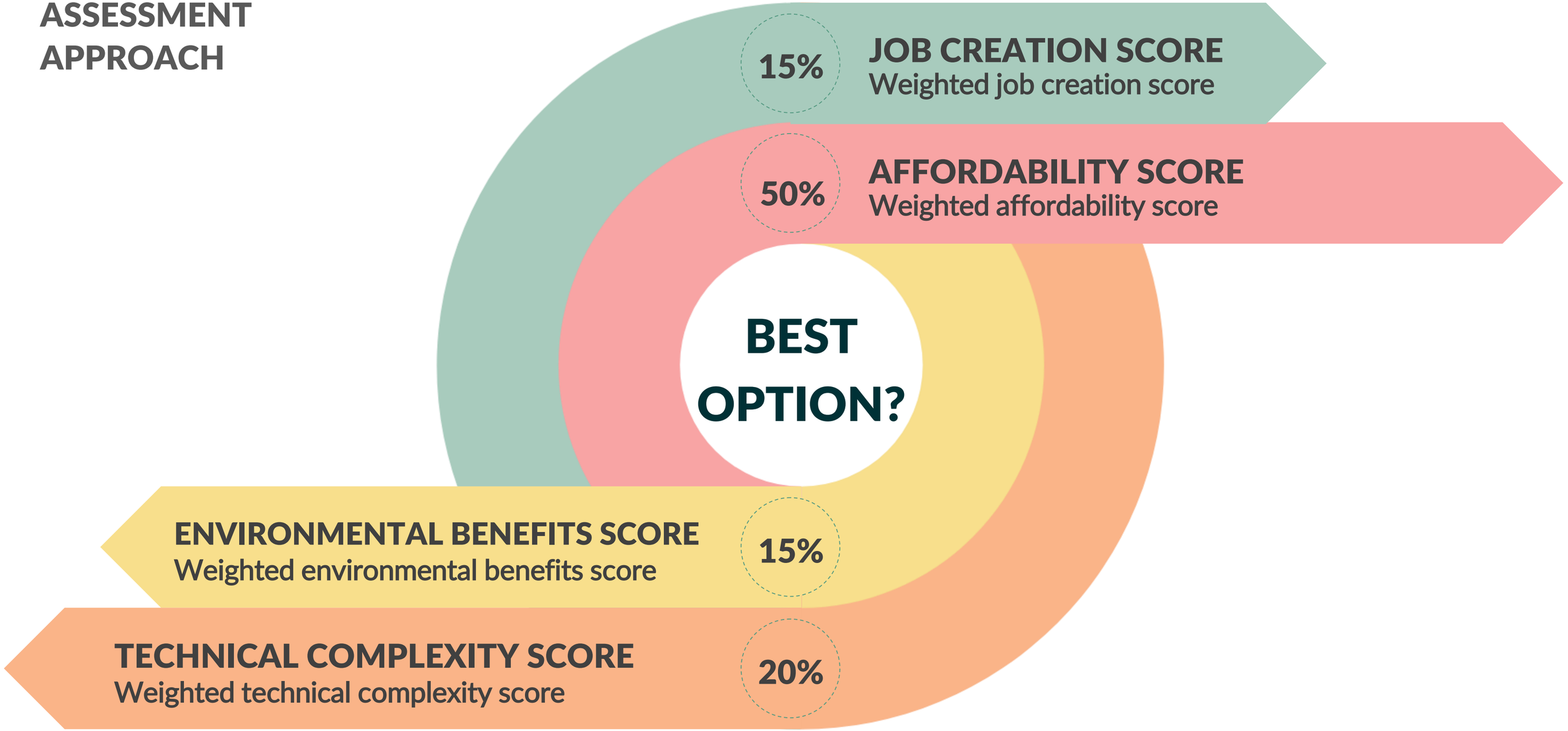
FUNDING MODEL	ANAEROBIC DIGESTOR PLANT	WINDROW COMPOSTING PLANT
Public Owned + SLA	OPTION A = Model 1	OPTION B = Model 2
PPP using blended finance	OPTION C= Model 3	OPTION D = Model 4



Insight: An economic cost-benefit analysis will take both financial and non-financial factors into account. However, if the LRG is budget-constrained and the project is not affordable for the LG, affordability will need to be a first-order factor in project selection. Finance experts will need to be engaged to develop a viable funding model.

ASSESS OPTIONS: RANKING OF OPTIONS

MULTI-CRITERIA ASSESSMENT APPROACH



ASSESS OPTIONS: RANKING OF OPTIONS

ILLUSTRATIVE EXAMPLE – WEIGHTS TO BE ADJUSTED GIVEN PROJECT SPECIFICS AND LG CONTEXT

CRITERIA	UNWEIGHTED SCORES					WEIGHTED SCORES			
	A	B	C	D	WEIGHT	A	B	C	D
Affordability	100	75	50	50	50%	50.0	37.5	25.0	25.0
Technical complexity	75	50	75	50	20%	15.0	10.0	15.0	10.0
Job creation	80	75	80	75	15%	12.0	11.3	12.0	11.3
Environmental benefit	75	50	75	50	15%	11.3	7.5	11.3	7.5
TOTAL					100%	88.3	66.3	63.3	53.8
RANKING						1	2	3	4

A

OPTION A

Achieves the highest weighted score, mainly due to its high affordability score and the 50% weighting assigned to the criteria

PHASE 4

EARLY PROJECT FINANCE

DETAILS ON STEP 4: EARLY PROJECT FINANCE

SECURING FINANCIAL COMMITMENTS

PROJECT MANAGER

CONSULTANT TEAM (financial expert)

NG ENGAGEMENT

- Assess relevance of national grant mechanisms
- Understand grant requirements and processes to access

LG ENGAGEMENT

- Present options assessment to LG's CFO
- Seek commitment for funding from CFO (own sources of revenue, debt, grants, etc.)
- Identify funding gap

DFI ENGAGEMENT

- Discuss project with development partners who may be able to support project development or fund the project
- Develop a concept note to apply for project preparation funding
- Verify funding assumptions
- Seek commitment for funding

Insight: Early engagement with developers and equipment suppliers is key to ensuring that a project will be attractive and viable for t private sector. Funding models may need to be reassessed or adapted if the private sector perceives it as too risky.

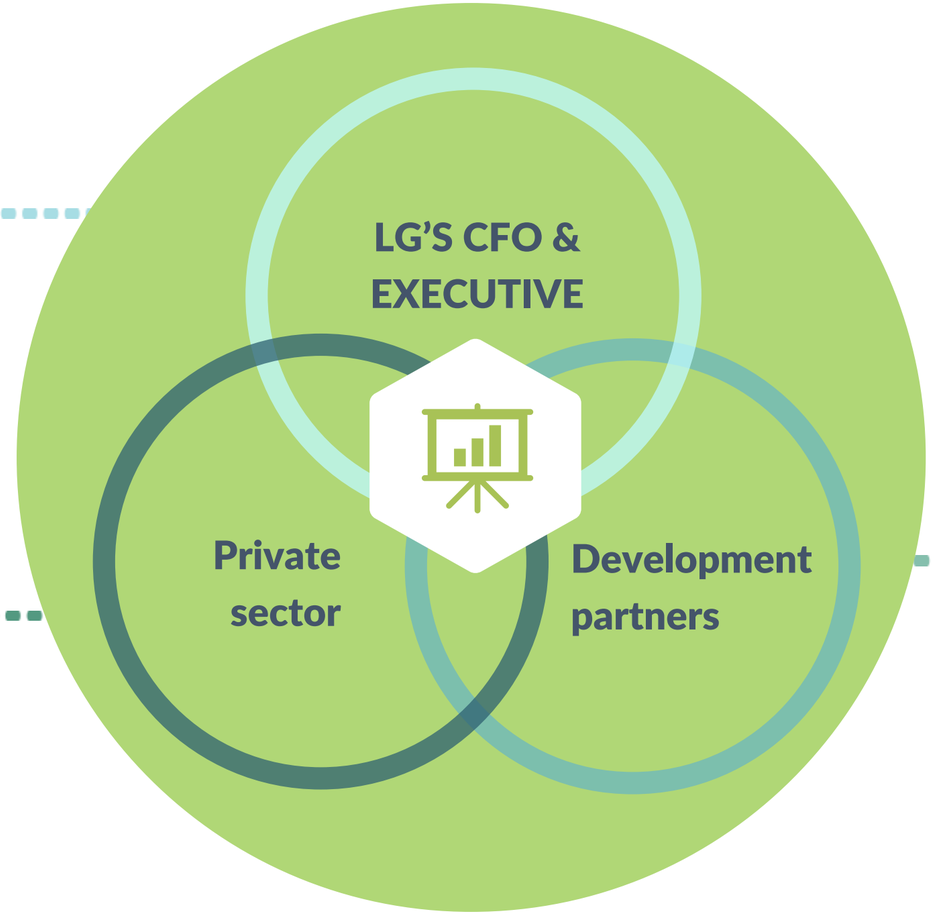
PHASE 5

DEMONSTRATING FEASIBILITY

DETAILS ON STEP 5: DEMONSTRATING FEASIBILITY

UNDERSTAND PROJECT VIABILITY NEEDS AND THE QUESTIONS THAT WILL NEED TO BE ANSWERED

- Whether the project is affordable
- What the project's impact will be on user fees/tariffs
- How the project aligns with development plans, job creation targets, etc.



- Political support (local & national) for project
- Development benefits (jobs, climate, etc.)
- Whether the project's benefits will be greater than its costs
- How social and environmental risks will be mitigated
- Whether the business model is sustainable

- Whether risks have been allocated appropriately between the private and public sectors
- LG's ability to pay the private sector for services

Insight: Historically, many SSA feasibility studies were led by technical experts with limited inputs from financial experts. This approach often resulted in technically sound, but unaffordable or unfunded solutions.

DETAILS ON STEP 5: DEMONSTRATING FEASIBILITY

100% RENEWABLES CITIES & REGIONS ROADMAP

STEPS 1 to 3

PROJECT MANAGER

CONSULTANT TEAM (all experts)

01 SITES

- Identify potential land sites
- Confirm ownership of the sites
- Consider what rights of access the private sector needs
- Identify land access mechanism (e.g. lease)

02 TECHNICAL STUDIES

- Assess the need for market assessments/surveys to inform revenue assumptions
- Quantify the project's capital and operational expenditure under different scenarios
- Quantify the project's revenues

03 MODELLING

- Develop a financial model that calculates the project's internal rate of return (IRR) and cost to LG and end users
- The financial model needs to conclude on affordability
- Economic modelling (if required) will quantify the project's economic benefits relative to its costs
- GHG modelling will quantify the project's emission savings

Insight: Market assessments or surveys may be required to inform revenue assumptions. Engagement with potential off-takers and buyers of biogas, electricity, compost, etc., will be key to ensuring that revenue forecasts are realistic and defendable.

DETAILS ON STEP 5: DEMONSTRATING FEASIBILITY

STEPS 4 to 6

PROJECT MANAGER

CONSULTANT TEAM (all experts)

04

CONFIRM FUNDING MODEL

- The financial model's outputs will confirm whether funding model is feasible
- Sensitivities test whether funding model remains feasible
- If funding model is not feasible, alternative funding models could be modelled.

05

M&E CRITERIA

- M&E criteria need to be identified
- GHG emission savings may need to be quantified and reported
- Baseline data may be required

06

REPORTING

- Feasibility report needs to answer funders' questions
- Report should be concise and contain key findings
- Underlying technical reports should form annexures

Insight: Consultants often produce dense reports that have "thud value," while shorter, punchier reports with annexures are far more likely to be read by funders and stakeholders. The project manager should work with the consultants to develop a report template that will be fit for purpose.

PHASE 6

SECURE FUNDING

DETAILS ON STEP 6: SECURE FUNDING

PROJECT MANAGER

Consultant Team (Finance Expert)

LG's Chief Financial Officer + Executive | **DFIs** | **NG**

PUBLIC OWNED & OPERATED

- Submit feasibility study to LG's CFO, Executive, and other involved parties (e.g., investors, National Government, DFIs, etc.)
- Present findings to Executive and obtain written approval for investment
- Present findings from feasibility study to external funders (DFIs, NG, etc.)
- Obtain written commitments from external funders
- Ensure that project's funding requirements are included in LG's budgets
- LG's CFO finalizes capital funding with LG's treasury and completes grant funding processes

PPP

- Submit feasibility study to LG's CFO, Executive, and other involved parties
- Present findings to Executive and obtain written approval to procure via a PPP
- Ensure that LG's future estimated payments to the private sector are included in the LG's budgets
- If relevant, present findings from feasibility study to external funders (DFIs, NG, etc.) to secure grants or concessional finance for the PPP

Insight: Grants from development partners or NG can be used to make any of the models more affordable to the LG.

PHASE 7

PROCUREMENT

DETAILS ON STEP 7: PROCUREMENT

PROJECT MANAGER

Consultant Team (Finance Expert)

LG's Chief Financial Officer + Executive

LG's Legal/Compliance Team

Construction Company

Operator

PUBLICLY OWNED & OPERATED

- Technical consultant develops designs
- Tender is issued to appoint an EPC contractor that contains clear evaluation criteria
- Consortia (equipment supplier & construction company) submit tenders
- Tenders are evaluated by the evaluation committee
- Preferred bidder is selected
- EPC contract is concluded

PUBLIC OWNED + SLA

- Technical consultant develops service specifications
- RFP is issued to appoint operator, containing clear evaluation criteria
- Operators submit tenders
- Tenders are evaluated and preferred bidder selected
- SLA is concluded

PPP

- Technical consultant develops output specifications
- Expression of Interest (EoI) is issued to shortlist consortia (equipment supplier, construction company & operator)
- Consortia are shortlisted by evaluation committee
- Request for Proposal (RFP) issued to shortlisted consortia with clear evaluation criteria
- Bids are evaluated by evaluation committee
- Preferred bidder is selected
- PPP Agreement is concluded

PHASE 8

MONITORING

DETAILS ON STEP 8: MONITORING

PROJECT MANAGER

LG's Chief Financial Officer + Executive

LG's Legal/Compliance Team

PUBLICLY OWNED & OPERATED

- LG appoints an independent engineer to monitor the EPC contractor
- The independent engineer must verify performance after construction is completed
- Final payments are only made to the EPC contractor once the performance is verified
- Performance guarantees/bonds are canceled following final sign-off from the independent engineer

PUBLICLY OWNED + SLA

- LG establishes SLA monitoring process or appoints consultant to undertake process
- LG processes payments to private sector based on performance

PPP

- SPV's lender appoints an independent engineer to monitor the EPC contractor
- Final payments are only made to the EPC contractor once performance is verified
- LG establishes internal process to ensure that SPV meets its obligations
- Monitoring process must track penalties and apply them to payments

Supported by:

Federal Ministry for Economic Affairs and Climate Action

IKI INTERNATIONAL CLIMATE INITIATIVE

on the basis of a decision by the German Bundestag

END OF MODULE

Module developed by: Rohit Sen, Andreina Garcia-Grisanti — ICLEI World Secretariat
Design: Andreina Garcia-Grisanti, Kanak Gokarn — ICLEI World Secretariat