



Toolkit: Energy Start-ups in GIZ Projects

Final draft

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1.5 Recent trends in energy start-ups

1.1 About this handbook

“A concise toolkit for GIZ projects aiming to promote or collaborate with start-ups in the energy sector.”

Based on interviews with and information from the following GIZ projects and experts:

- Algeria/regional – Pan African University Institute of Water and Energy Sciences: Abdallah El-Moutawakil Baghli
- Brazil - H2 Brasil: Mandla Makalima, Sebastian Ladnorg
- Chile - Energy Partnership Chile-Alemania
- Ethiopia - Ethiopian-German Energy Cooperation: Florian Fritzsche, Dawit Dagnew
- Global - Bilateral Energy partnerships: Torsten Fritzsche, Anne Persicke
- Global - Water and Energy for Food (WE4F): Thomas Breuer
- Global – FMB, private sector cooperation: Andra Kiggen, Bernadette Freund
- Global - MAKE-IT: Matthias Rehfeld
- Global – FMB, Economic Policy and Private Sector Development: Felix Kullmann
- Mexico - German-Mexican Energy Partnership: Francisco A. Contreras del Valle
- Morocco - Accompagnement du plan solaire marocain: Verick Schick
- Morocco - German-Moroccan Energy Partnership (PAREMA): Veit Raisch, Yasmine Boutaib
- Namibia - Green People's Energy (GPE) Namibia & StartUp Namibia: Simon Inauen, Hafeni Motsi
- Senegal - PESEREEE II - Ulrike Wiegelmann
- South Africa - SAGEN-CET: Lilian Laurisch, Zanele Hakamela
- Southeast Asia - New Energy Nexus Southeast Asia (Nexus SEA): Simon Rolland
- Ukraine - Promotion of energy efficiency and implementation of EU Directive on Energy Efficiency in Ukraine – Danija Krieg, Iryna Yuryeva

1.2 How to use this handbook



This handbook covers 3 main activities that should be considered when working with energy start-ups in GIZ projects

1. Project design & preparation
2. Support to energy start-ups
3. Direct collaboration with start-ups



Under each activity, there is a description of various steps and issues to consider.

- A definition of the activity
- Its purpose
- When it should be applied/implemented
- Factors to consider to ensure success
- Advantages, disadvantages and risks associated with the activity



The activities are organised in a chronological order but are also inter-connected.

- It should therefore be looked at holistically
- Its use should be adapted to the context and specifics of the project in question.



Project examples

The description of activities is completed with examples of GIZ projects with respective implementation experiences.

1.3 Defining start-ups

“businesses between ideation and scale-up phase”

“company younger than 5 years”

“Startups are young companies founded to develop a unique product or service, bring it to market and make it irresistible and irreplaceable for customers.”

Startups are rooted in innovation, addressing the deficiencies of existing products or creating entirely new categories of goods and services”

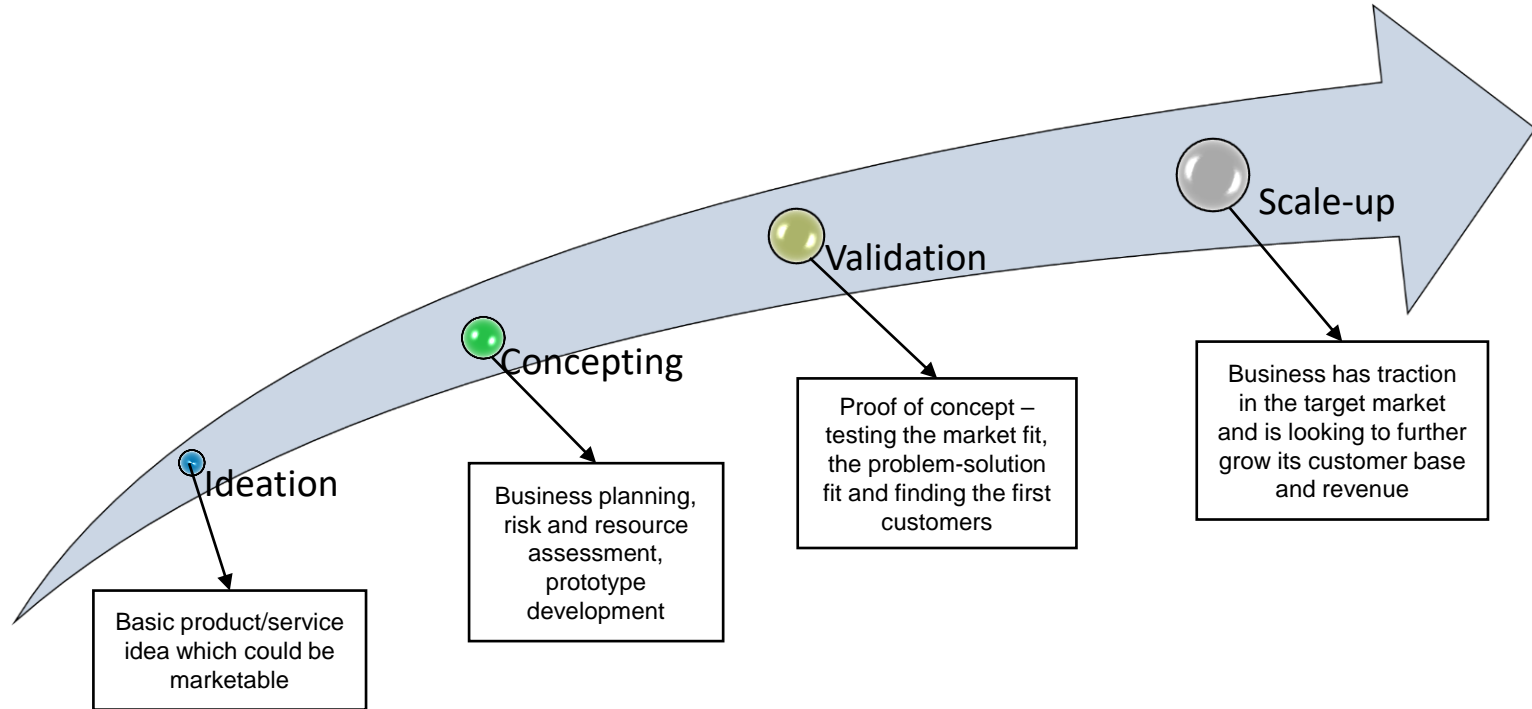
Forbes Advisor, 2021

“any company entering new markets with an innovative product or service”

“for profit, registered business with a team of at least two people and in the early stages of business development”

There is no unique definition of start-ups. Projects should however decide on their own definition, and adhere to it during all stages of project implementation and communication.

1.4 Stages of start-up development



1.5 Recent trends in start-ups – energy & development

Digitalization

new markets, better access to knowledge, new business models (e-commerce, platform economy...)

New stakeholders

Increased interest and investment by large corporates in start-ups (e.g., Schneider Electric, Siemens)

New sources of finance

Impact investors, crowd-funding platforms, increased venture capital availability

Social entrepreneurship

Sustainability ambitions and climate change as new drivers for business development

Universities and graduates

Growing number of graduates, and entrepreneurship-focus of many curricula in developing countries

New forms and methods of trainings

Online and blended learning, design thinking, hackathons, entrepreneurship bootcamps

Based on: GIZ (2019): Principles of Entrepreneurship Promotion

Role of start-ups in sustainable development

Start-ups can significantly shape contribute to the development of target countries, e.g. through:



Increased **competition** – more efficient provision of energy products and services



Accelerated **innovation** processes - emergence of new technologies and business models



Structural **change** in the local economy – continuous adaption of new production methods and service provision through “creative destruction” (e.g., mobile payments)



Local economic **development** – employment through entrepreneurship, increased local private sector added value

Start-ups should not only be seen as a “fancy” target group or beneficiary of support interventions, but also as change agents that can contribute to the project’s objectives – such as universal access to sustainable energy.

Based on: BMZ (2012) - Start-up promotion instruments in OECD countries and their application in developing countries

Guideline for Working with Start-Ups in Energy Projects



2. Project Design & Preparation

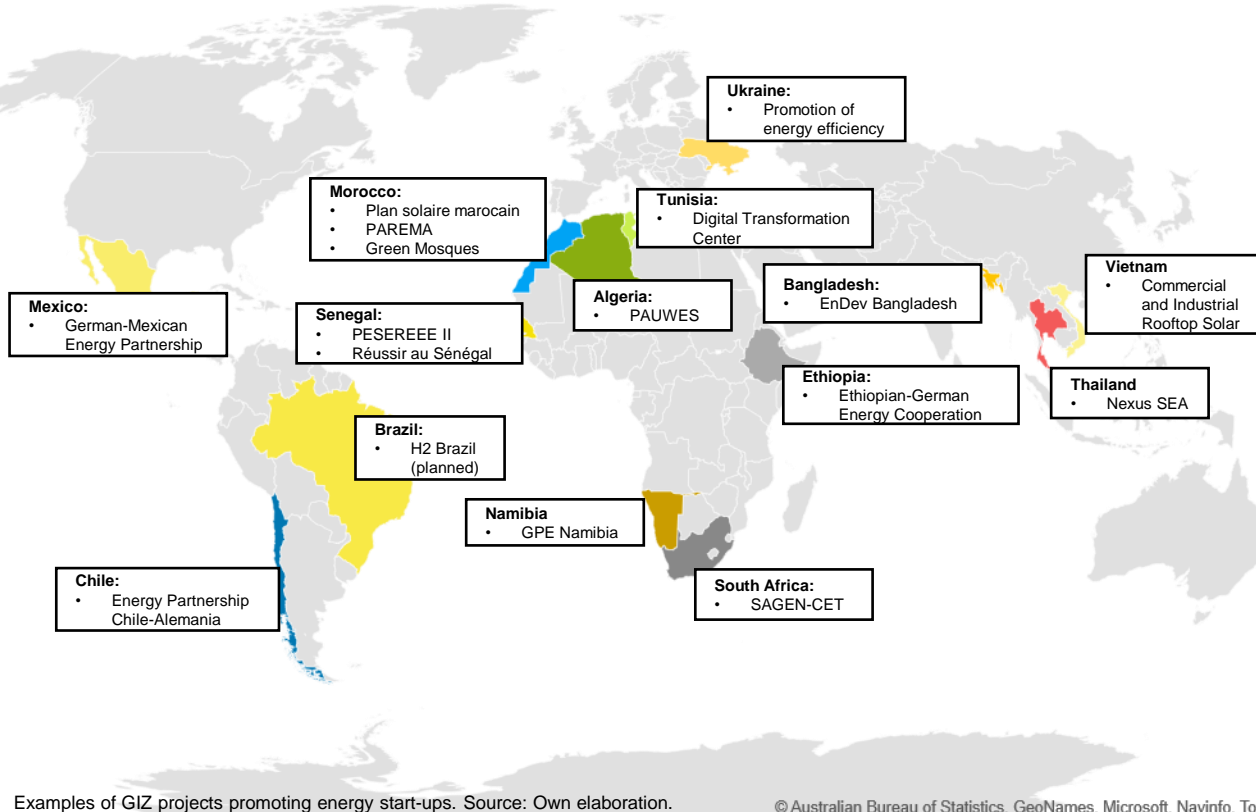
[2.1 Knowledge exchange with other GIZ projects](#)

[2.2 Definition of expected outcomes and target group](#)

[2.3 Entrepreneurial ecosystem analysis](#)

[2.4 Further reading](#)

2.1 Knowledge exchange with other GIZ projects



Global projects:

- MAKE-IT in Africa
- Water and Energy for Food
- Fund for the Promotion of Innovation in Agriculture / Agricultural Policy and Innovation Fund (FABI)
- EnDev - Smart Communities Coalition Innovation Fund
- GET.Invest
- Water and Energy for Food (WE4F)
- TUMI Mobility

Sector-specific expertise:

- Community of Practice Energy - (MS Teams)
- FMB Energy & Transport
- FMB Private Sector Cooperation
- FMB Economic Policy and Private Sector Development
- ...

Examples of GIZ projects promoting energy start-ups. Source: Own elaboration.

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2.2 Definition of expected outcomes and target group

Defining project outcomes and target group

Expected outcomes – is the support to start-ups provided to...

- ✓... achieve energy policy targets?
- ✓... support a specific target group, e.g., young or female entrepreneurs?
- ✓... identify solutions for a specific challenge?
- ✓... increase innovation and business capacities?

Target group / beneficiaries: Will the project support...

- ✓... students and graduates?
- ✓... existing start-ups and companies?
- ✓... specific institutions, e.g., universities?
- ✓... or is the exact target group yet to be defined?

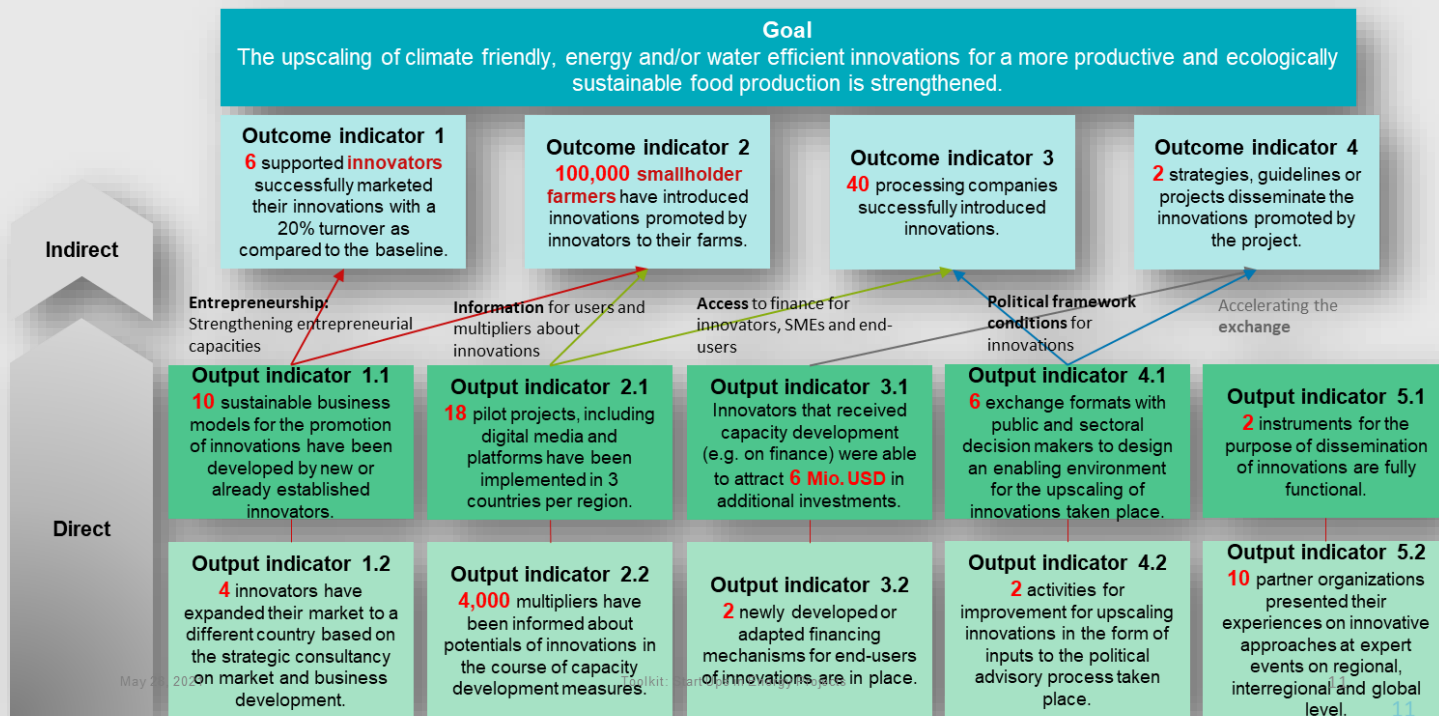
Success factors

- **Value proposition:** Ensure that start-up activities are well integrated in the whole project and their value well understood
- **Participation and ownership:** Engage partner institutions already in the planning phase – ideally representing both the energy and innovation sector
- **Resources:** Activities are allocated sufficient resources: human resources, finance, time!
- **Form follows function** - The suitable type of support offered to start-ups depends on the project's overall objectives, exact target group, as well as other activities implemented by the project / GIZ.
- **Logical framework** - How are start-up activities embedded in the overall project goal and linked with other activities?
- **Monitoring and Evaluation:** Should be integrated as part of the project activities and addressed at the project design phase by using tools such as the Logical Framework Analysis or Theory of Change



2.2 Project design: Water and Energy for Food (WE4F) Logframe

Project Example



WE4F overall goal is to upscale innovations in specific sectors. This is reflected in the project logframe's outcomes and target group.

2.3 Entrepreneurial ecosystem analysis

What is it? - An analysis of...

- *Culture*: attitudes towards innovation and entrepreneurship
- *Access to markets*: local / national / international
- *Policy and regulatory frameworks*: Energy, climate change, innovation and entrepreneurship
- *Access to finance*: Sector-specific!
- *Support*: Incubators, programmes, R&D infrastructure...
- *Human capital*: skilled/unskilled, technical/entrepreneurial

Why do we need it?

- Applicable in some projects, especially where there is a need to
- Develop an understanding of actors, resources and support that exists locally that could benefit the project activities with start-ups and sustainability aspects
- Avoid duplication of efforts
- Understand where the project fits in the broader scope locally for the purpose of influencing policy or contributing to the development of the national ecosystem

When can we use it?

- Ideal as a first step for all projects looking to engage with start-ups/integrate entrepreneurship to achieve project results or as a focus

2.3 Entrepreneurial ecosystem analysis: Success factors

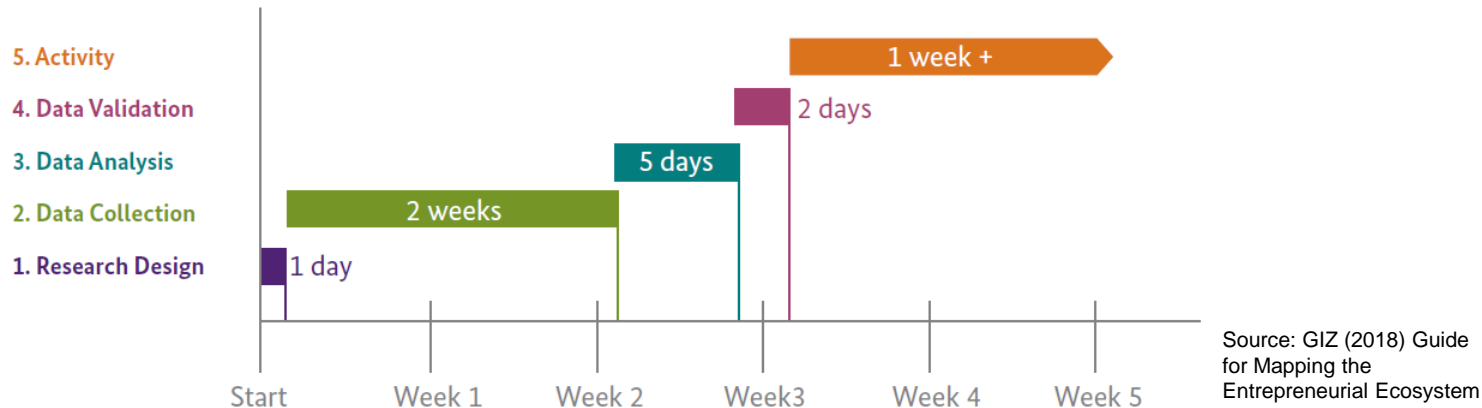
Holistic scope

- Entrepreneurial ecosystem analyses should go beyond a sole stakeholder mapping, but
- It should be user-centred and address existing frameworks, market dynamics and needs of existing start-ups.

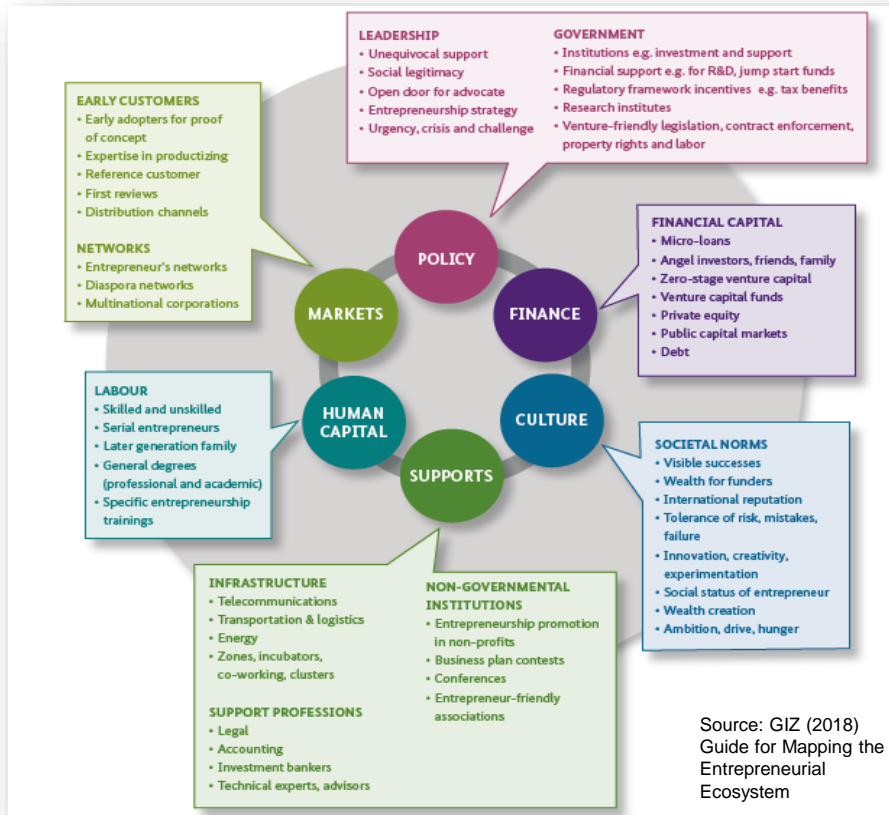
Expertise requirements

- Analyses should be carried out through a “business lens” by specialized agencies with deep knowledge of local market dynamics.

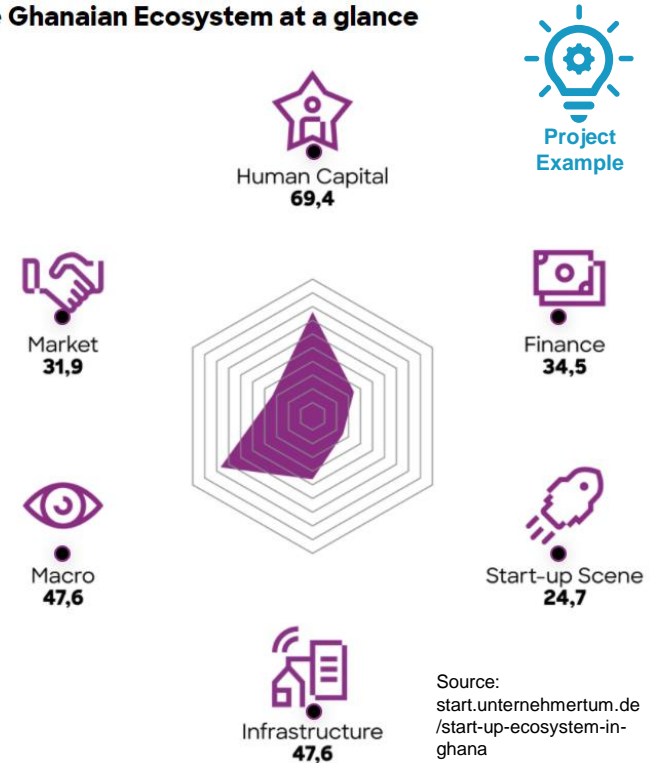
Entrepreneurial ecosystem mapping - indicative timeline:



2.3 Entrepreneurial ecosystem analysis: framework



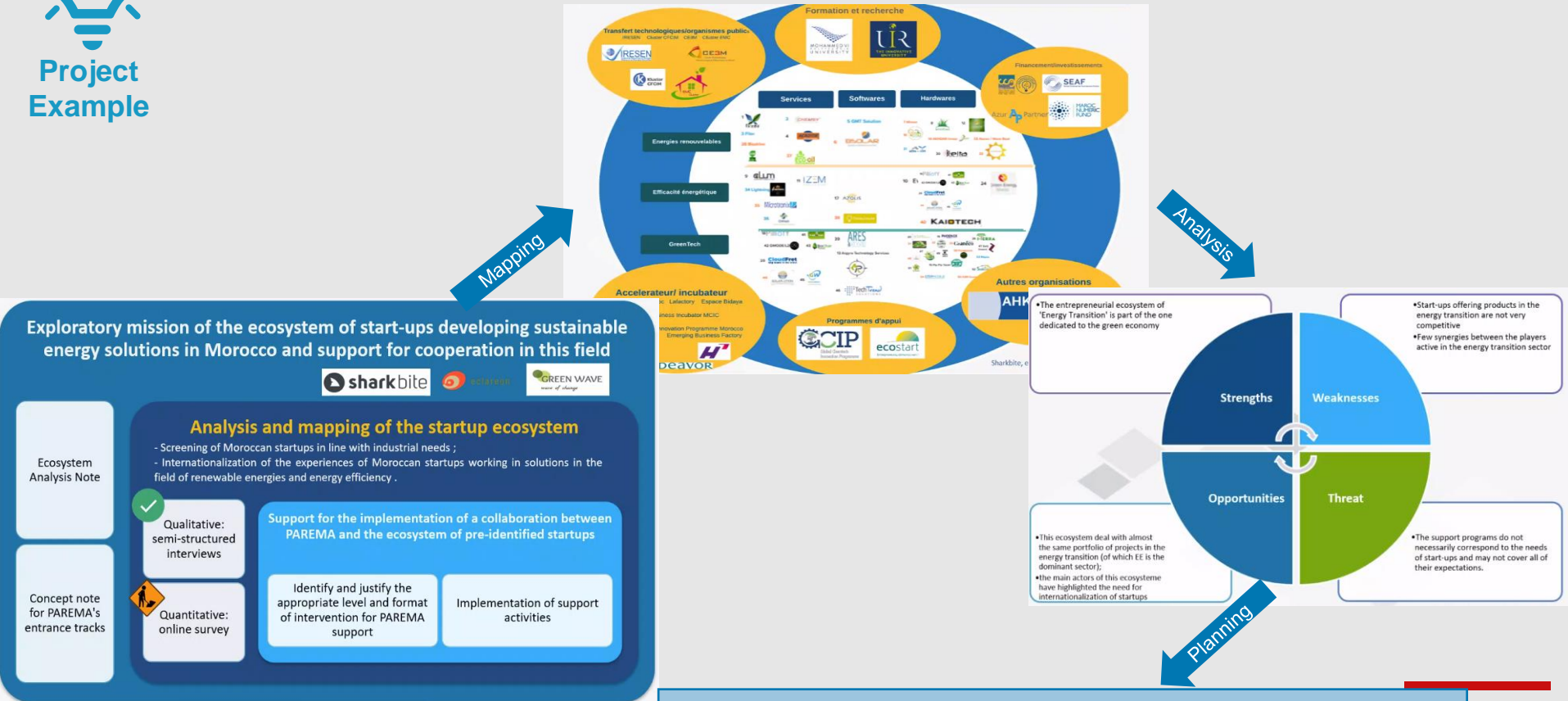
The Ghanaian Ecosystem at a glance





Project Example

Energy start-up ecosystem analysis of the German-Moroccan Energy Partnership (PAREMA)



PAREMA's specific support and collaboration activities with energy start-ups will be based on the results on the ecosystem analysis.

2.4 Further background reading

Publications:

GIZ (2018): Guide for Mapping the Entrepreneurial Ecosystem

GIZ (2012): Start-up promotion instruments in OECD countries and their application in developing countries

GIZ (2019): A Mentorship Guide Mentor-Driven Capital for Entrepreneurial Success in Africa

GIZ (2018): Start-up Loop handbook for participants

Endeavor (2018): Fostering Productive Entrepreneurship Communities

ILO (2015): Start your Business Manual

MBI (2015) International Best Practices on Supporting Start-Up Ecosystems

Websites:

IDA page on promoting innovations: <https://gizonline.sharepoint.com/sites/beezy/groups/1545/Pages/Home.aspx>

MAKE-IT Investment Guide Africa: <http://investment-guide-africa.make-it-initiative.org/#/>

UnternehmerTUM GmbH Start-up Services: <https://start.unternehmertum.de/collaboration-readiness>

Guideline for Working with Start-Ups in Energy Projects



3. Support to energy start-ups

3.1 Innovation Challenges

3.2 Hackathons

3.3 Entrepreneurship training

3.4 Institutional support to entrepreneurship hubs / incubation centres

3.5 Incubation & acceleration support

3.1 Innovation Challenges

What is it?

- Innovation competitions inviting innovators to participate in a competitive process with ideas addressing a specific energy challenge
- A compelling way of gathering innovative ideas from students, researchers, entrepreneurs and start-ups
- Typically implemented by launching and disseminating a call for proposals/ideas based on eligibility and evaluation criteria

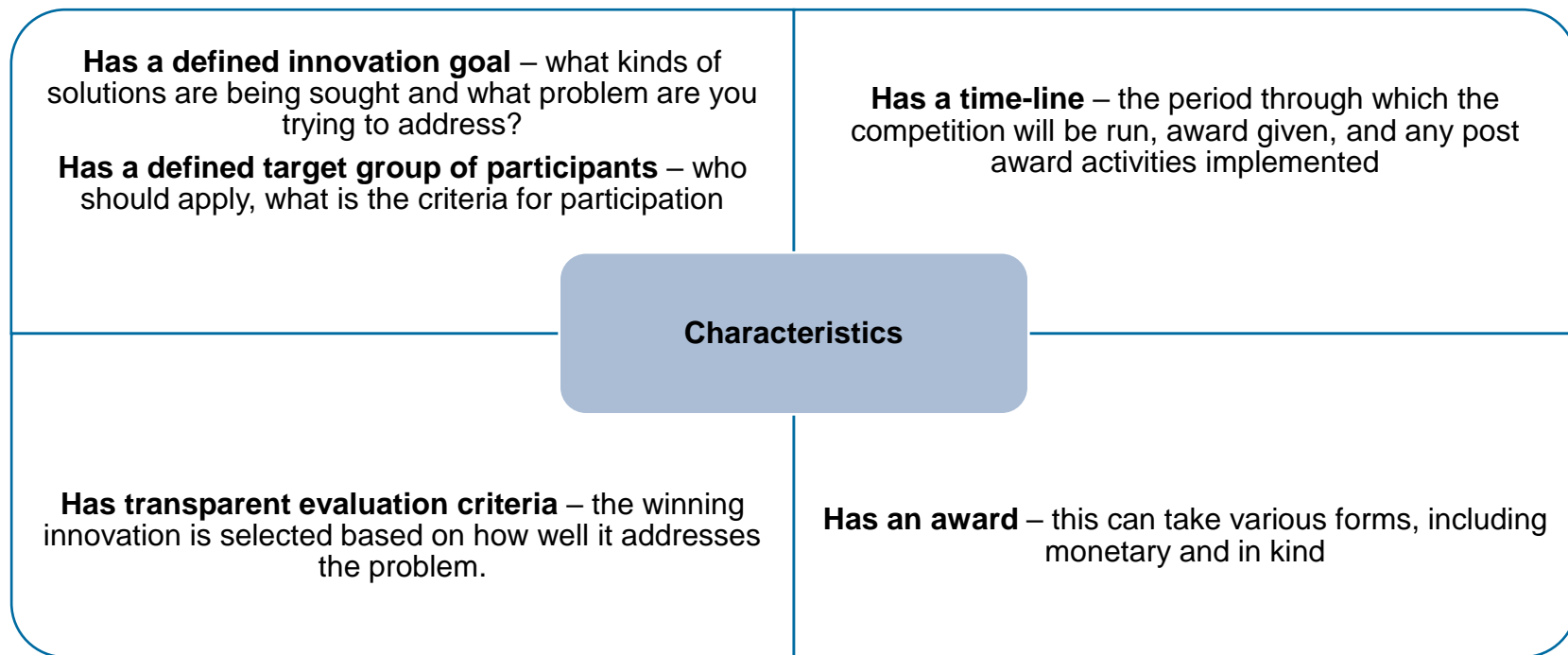
Why do we need it?

- Accelerate demonstration.
- Find innovations addressing a specific problem.
- Unlock innovation potential.

When can we use it?

- Most suitable for projects that are looking to engage the public e.g youth, research institutions and entrepreneurs, in addressing energy challenges.

3.1 Innovation Challenges: Characteristics



3.1 Innovation Challenges: Success Factors (1)

Defining the innovation challenge

- Define a goal that also aims to achieve/contribute to the objective(s) of the overall energy project
- Clearly define the types of businesses/individuals being targeted – e.g start-ups (with a definition of what these are considered to be), SMEs, established businesses with innovations, non-registered companies with innovations such as university students.
- Define the eligibility criteria – e.g., age cut-off if any (of the individuals or companies), types of innovations being sought (what challenge should they address)
- Define the selection criteria – e.g., Innovation; Economic viability; Gender, Social and environmental impact
- The type of award should be dependent on the objectives of integrating start-ups in the project and should be clearly indicated in the competition call e.g., monetary prize, training, technical support, facilitation of access to networks and finance, enrolment into a business incubation or acceleration programme

Resources and inputs required

- Identify what expertise and knowledge is required to run the challenge e.g skills in organizing innovation challenges and events, marketing and communication (website development, external communication including on social media platforms)
- Is that expertise in-house or should it be sourced externally?
- Ensure there is sufficient budget allocation for acquiring expertise, organizing the launch pitching events, remunerating jury members, hiring consultants and technical service providers, acquiring external platforms and prizes

Selecting jury members

- Select a jury that represents the competition's target group
- Choose a jury that possesses both local and international knowledge on the energy sector, innovation and entrepreneurship
- The number of jury members should be based on the expected level of applications and duration of time commitment e.g., 20 applications/jury member for 5 days of work for a local competition

3.1 Innovation Challenges: Success Factors (2)

Setting eligibility and evaluation criteria

- The evaluation criteria should reflect the objective(s) of the energy project and competition

Setting up the evaluation process

- Include a pre-screening stage to sift applications not meeting the basic criteria
- Select a platform that will allow the jury to review, rate and comment the applications easily in text, e.g., EasyChair
- Applications should ideally be reviewed by 2 – 3 jury members separately

Launching a call

- Collaboration with local innovation and entrepreneurial hubs such as incubators, accelerators, universities has more impact such as cost effectiveness and reach and penetration to the local networks and target group
- Disseminate the call on various platforms beyond the project's website, e.g., social media platforms, project partner channels and through media partnerships
- Develop a communication plan on continuously promoting the call after the launch date

Organising a pitching competition

- Organising this as part of a bigger event is more likely to attract large audiences – including potential investors and business partners

3.1 Innovation Challenges: Potential prizes

Monetary prize

- financial support for a specific need in the business, such as buying equipment, hiring expertise/increasing human resource, product development
- seed capital to support the running of the business before it can generate own income

Capacity building

- Entrepreneurship training on various business skills such as business presentation and pitching, financial management, pricing, marketing, developing a USP, building a team, building business networks

Technical support

- Technical expertise to develop the start-up's product from prototype to commercialization

Facilitation to access networks and finance

- support to attend conferences and events on energy
- exposure and support to access venture capitalists, angel investors, business grantors and seed financiers

Enrolment into a business incubation or acceleration programme

- Support to receive business incubation services to build up the company, e.g., through mentorship and coaching
- Support to receive business acceleration services to facilitate finance and long-term growth of the company

Pilot testing

- Partnership to carry out pilot testing in the target customer base e.g., with a GIZ project aiming to achieve rural electrification

3.1 Innovation Challenges: basic cycle of planning an innovation challenge



Defining the innovation challenge

What do you want to address?

What is the expected outcome/goal for the challenge

Who do you want to participate in the challenge?

What is the criteria for participation and

Award for the winners?

Which other stakeholders should be involved in the process e.g. Jury members



Selecting jury members

How many jury members are needed?

What type of expertise should they have?

What other factors should be considered in their selection?

What kind of relationship will you establish (voluntary, contractual)?



Eligibility and evaluation criteria

Who is eligible for the innovation challenge?

What kind of innovations are sought for?

How will the proposals be evaluated?



Evaluation Process

How will you design the evaluation process (e.g. one vs. s

How many steps will be in the selection process?

Who will be involved in each step?



Call for proposals

What should be included in the call?

Where will you host it?

What format will you accept applications?

How, where and when will you advertise it?



Pitching Competition

What is the criteria for winning?

Who will be involved in the assessment?

When and where will it be held (part of a bigger event, stand-alone event)?

Will you offer any **preparatory support** to finalists?

How will you publicise the competition?

3.1 Innovation Challenges: advantages, disadvantages and risks

Advantages

- Provides an effective way for energy projects to **identify innovations/companies** to work with or support by tapping on multiple networks
- Implemented well, they contribute to developing the **local innovation** and entrepreneurship ecosystem
- Allows GIZ projects to **offer support that is need based** – especially when this is clearly defined from the onset, start-ups looking for such support are most likely to participate in the competition

Disadvantages

- Planning and implementation can be **time consuming** and requires at least 6-12 months
- Successful challenges require considerable allocation of **resources** (financial and HR)
- When implemented as one-off activities, **sustainability aspects** are difficult to factor in the competition, for instance – what happens to the start-ups after they have received the award? How does the project monitor its impact on the winning and participating start-ups?

Risks

- Due to the **short-term engagement** with the winning start-ups, the risk of them failing as a result of inadequate long-term support is likely
- Possibility of **excluding good start-ups** that are not 'experts' in taking part in competitions



Example

3.1 Pan African University (PAU) Innovation Challenge

PAU INNOVATION CHALLENGE



www.pau-au.africa

START

- 27.04.2020 Competition Launch
- 27.04 – 14.06.2020 Upload Training Videos
- 15.06 – 10.07.2020 Coaching
- 14.06.2020 Review Deadline
- 14.07.2020 Final Deadline
- 10.05 – 15.05.2020 Idea Feedback
- Pitch Event (to be determined)

PAU Innovation Challenge
Grand Final Event
7th June, 2021
14h00 – 17h00 EAT

Event snapshot



Participants

- 42 PAU student groups
- 27 Alumni groups
- 241 participants
- 8 selected finalist teams
- 2 finalist team per institute

Gender balance

- 50% of the team leaders participating in the PAU Innovation Challenge are women

Sectors

- E-trade
- Global supply chain
- Recycling for efficiency
- Off-farm and e-farming
- Economies of scale
- Clean energy technology
- The future GAFA

Prizes

- Cash prizes up to USD9,000 sponsored by AfDB.
- Three months incubation program provided by GIZ.

ADDITIONAL INFORMATION

The Grand Final event will take an online format via Zoom and streamed live on Youtube.

The event will be under the patronage of the African Union Commissioner.

All updates and news about the Innovation Challenge will be available on PAU's website: <https://pau-au.africa/>

1st Place Winner of the PAU INNOVATION CHALLENGE

Awarded to: **SoCool**

Cheque value: **5000 \$**

Date: 07.06.2021

Incubation Prize of the PAU INNOVATION CHALLENGE

Awarded to: **All Winning Teams**

Prize value: **3 months incubation at an incubator of own choice**

Date: 07.06.2021

Monetary prize was provided by AfDB. Winner: SoCool, PAUWES

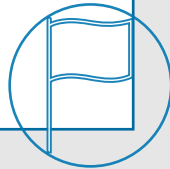


Project Example

3.1 Innovation challenge by Green People's Energy - Productive Use of Renewable Energy (PURE), Namibia

- 10 innovative RE ventures
- Solutions on remote digital monitoring and maintenance
- Objective 1: RE ventures develop bankable business models
- Objective 2: Foster partnerships between local and German technology providers
- Objective 3: De-risk at least 5 of the RE ventures

Goal



- Youth run businesses (18 – 35)
- Registered companies
- At least 12 months old

Key stakeholders



- Innovative business model or enabling technology
- Innovative solution for reducing maintenance costs

Evaluation criteria



3.2 Hackathons

What is it?

- Hackathon=hack (experimental)+marathon
- Participants come together, in small groups, to solve a specific challenge/problem in a short time (24 – 72 hours)
- The result is a finished prototype for an innovative product, service or business model – or just an idea on how to solve the problem

Why do we need it?

- Fosters collaborative working on common challenges
- Allows for a more inclusive approach to engaging innovators as large groups can participate

When can we use it?

- Ideal when a project is looking to build skills on skills on entrepreneurship, innovative thinking and creativity in the energy sector, e.g., to university students
- When a project is looking for a quick and short way to generate solutions/ideas to a specific problem without necessarily engaging participants in a competition
- In settings where a project has limited resources to engage innovators

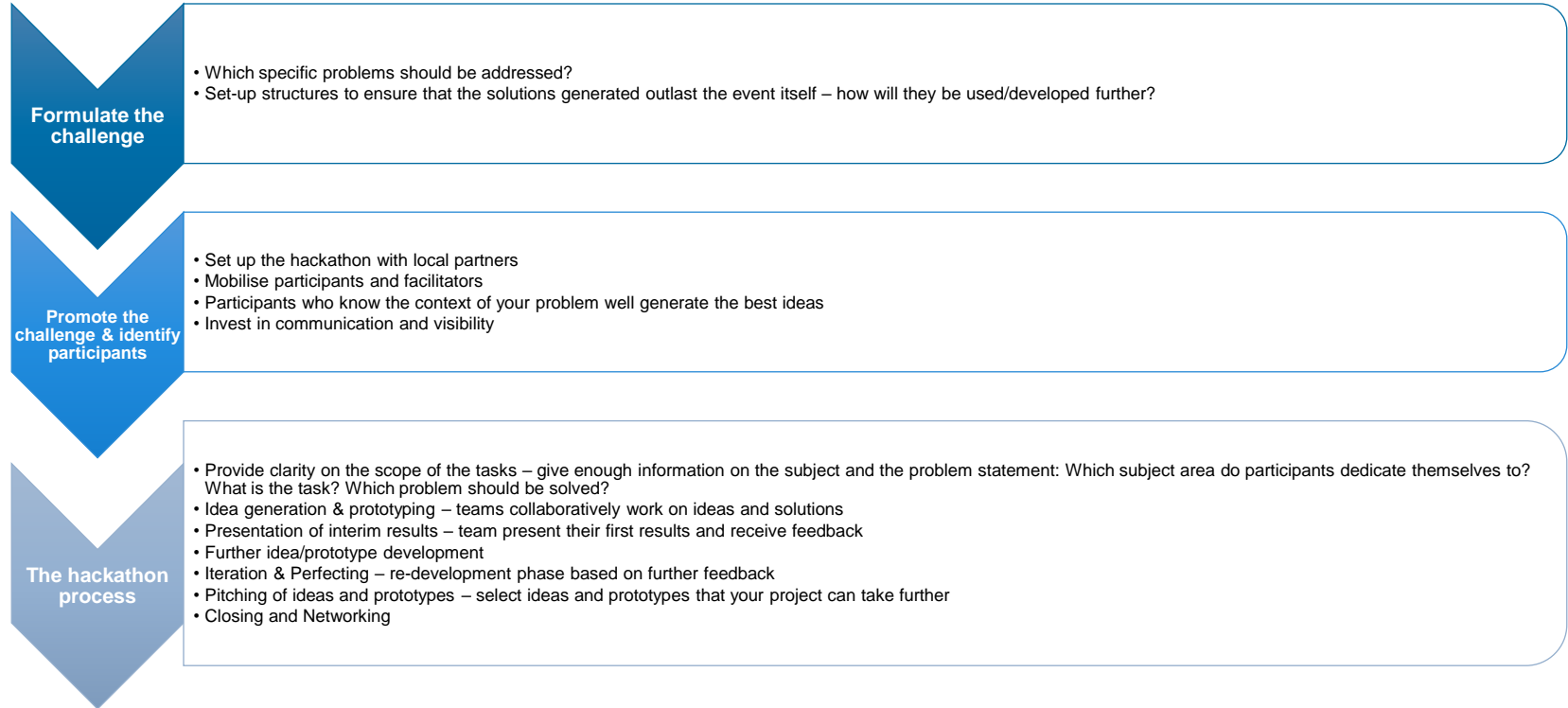


Project Example: Modernisation partnership for energy efficiency in hospitals, Ukraine

Project
Example

#HOSPITAL_ENERGYLAB Hackathon 2019 on Youtube:
<https://www.youtube.com/watch?v=TEtDbQ3XPzA>

3.2 Hackathons: basic process



3.3 Entrepreneurship Training

What is it?

- Equipping participants with skills that enable them to further develop their businesses and teams, such as business presentation skills, financial management, pricing, marketing, developing USP, team building, building business networks

Why do we need it?

- Start-ups often emerge from research or technological innovations – especially in technology-intensive areas as the energy sector - involving staff with limited business skills and entrepreneurial competencies
- Tailored trainings can equip start-ups with knowledge and skills necessary to get them from ideation to business case concepting and scale-up phase

When can we use it?

- Especially useful for start-ups that are newly established
- Can be offered as a reward from an innovation challenge

3.3 Entrepreneurship Training: Success factors

Identifying the knowledge gaps

- Determining knowledge gaps during the start-up selection process through a training needs assessment
- Tailored training to the specific needs of the start-ups generates more impact
- Recognising that innovators do not necessarily have entrepreneurship skills is important

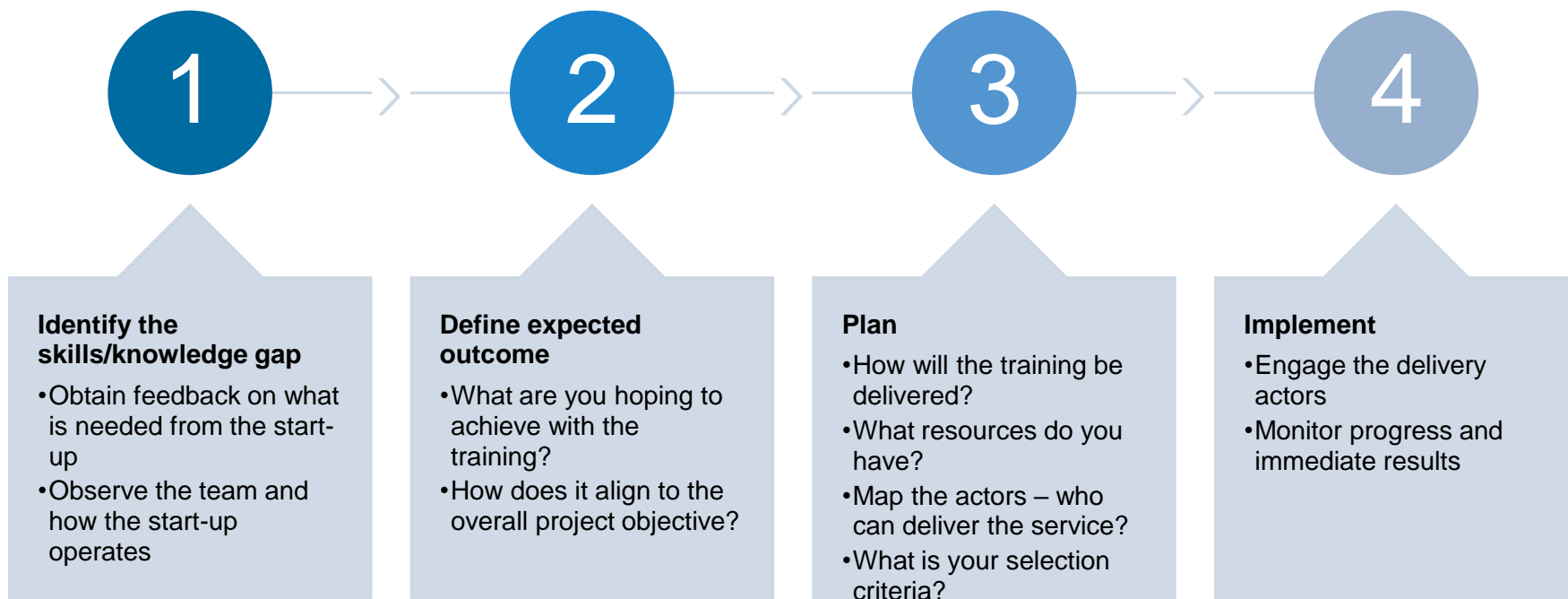
Expected Outcome

- The impact of the training should be measurable/visible
- For tangible impact, training programmes should be accompanied by funding sources – either by providing seed funding or access/pathways to attaining it

Delivering training

- Focus on a small number of entrepreneurs with promising business prospects and entrepreneurial attitudes
- Link the training to other activities such as start-up competitions (slide 19 – 26), entrepreneurial initiatives at universities and support networks for start-ups to identify the above groups
- Select a service provider who has prior experience training start-ups in the energy sector and has a broad network e.g., a local incubator/accelerator
- Implementing training with actors within the start-up ecosystem (e.g., incubators, accelerators), gives the added value of exposure to networks and peer support

3.3 Entrepreneurship Training: basic cycle of planning entrepreneurship training



3.3 Entrepreneurship Training: advantages, disadvantages and risks

Advantages

- Equips start-ups with skills that could contribute significantly to their **growth**
- Training can be **tailored** to suit the specific needs of the supported start-ups

Disadvantages

- Most trainings are normally limited to **key-persons** in the start-up which inhibits knowledge development of whole teams
- **Limited systemic** long-term effects, if organized as stand-alone events

Risks

- **Organisational knowledge** can be lost if trained start-up co-founders/teams fall out
- Securing the **wrong trainer** can have a negative impact on the trainees and programme



Project Example

3.3 Success story 1: Clean Energy Maroc, Morocco

- **Cleanenergy Maroc** manufactures and supplies innovative solar photovoltaic solutions for residential, industrial and agricultural applications
- Until 2015, CleanEnergy Maroc received **entrepreneurship training and incubation support through** the Moroccan Solar Cluster, supported by GIZ (« accompagnement du plan solaire marocain »)
- **GIZ provided support** to entrepreneurs and start-ups through CIM expert seconded to the Moroccan solar cluster: entrepreneurship training & guide, coaching, facilitation of access to finance
- Start-ups to receive support were **identified through innovation challenges**

LE GUIDE DE
L'ENTREPRENEUR
Green Tech au Maroc
#startup

CLUSTER SOLAIRE giz



Source: CleanEnergy Maroc

3.4 Providing pre-incubation, incubation, and acceleration support

What is it?

- Support given to start-ups through all or any of the 4 phases of development (ideation, conceptualisation, validation and scaling)
- Projects can target to support energy start-ups through all of these phases or some of them.
- Support can be in the form of giving access to organisations running these services (i.e incubators, accelerators) by funding costs related to those services.

Why do we need it?

- Enable and catapult energy start-ups advance to the next level of business development

When can we use it?

- This support can also be offered as an award from an innovation challenge

3.4 Providing pre-incubation, incubation, and acceleration support: success factors

Invest in local capacities

- Avoid building up parallel structures, crowd out or substitution of local actors
- Instead, collaborate and build partnerships with key actors identified in the entrepreneurial ecosystem analysis
- In instances where relevant actors do not exist, providing institutional support in [setting up the incubator/accelerator programmes](#) is more efficient.

Criteria setting

- Set the parameters on the stage and type of start-ups the project intends to support for efficiency and ease in addressing the needs

Access to resources

- Type of resources (financial and human) should be determined and allocated from the onset to facilitate the provision of these services to the selected start-ups

Achieving high-level impact

- To impact local innovation policy, link to technology initiatives, initiatives at universities to raise entrepreneurial attitudes amongst graduates, or with start-up competitions in pre-selected fields of technology.

3.4 Providing pre-incubation, incubation, and acceleration support: services offered to start-ups

Pre-incubation

Target: Start-ups in Ideation stage

Support: specific training, mentoring and consultancy services to understand whether their ideas are viable, marketable, scalable, etc.; provision of office spaces, common working areas

Period: 6 months – 1 year

Incubation

Target: start-ups in concepting and validation stage

Support: technical support to build a viable minimum product, business plan development, product testing and market entry, access to seed funding (e.g grants, angel investors)

Period: 1 – 3 years

Acceleration

Target: start-ups in the scaling stage

Support: education, mentorship, networking and finance. Aim is to increase the start-ups market share and growth

Period: 3 – 6 months

3.4 Providing pre-incubation, incubation, and acceleration support: advantages, disadvantages and risks

Advantages

- Offers an opportunity to provide **long-term support** to start-ups, reducing risk of failure
- It can be useful in influencing **innovation policy**
- It can be **linked to technology programmes** in universities to raise entrepreneurial attitudes amongst graduates

Disadvantages

- Is best suited to **Middle-Income Countries** (MICs) as it requires an already existing innovation strategy
- Successful application requires the existence of functional and efficient **service providers** locally

Risks

- Poorly developed **service providers**, overly reliant on donor funding for existence can have a negative impact on the start-up and require more investment from the energy project
- Unless embedded in existing local structures, it can **distort the local entrepreneurial ecosystem**



Project Example

3.4 Providing pre-incubation, incubation, and acceleration support: Project Example - New Nexus Energy, Southeast Asia



3.5 Institutional support to entrepreneurship hubs or incubation centres

What is it?

- Direct support to renewable energy hubs and incubators by
- Providing technical assistance and institutional building for hub management, investment management, and capacity building
- Acting as a conduit to financial (seed funders, venture capitalists,...) and information networks useful for energy start-ups
- Partnership in delivering tailored services to energy start-ups such as entrepreneurship training, technical support, seed funding, mentorship, networking, product validation etc.

Why do we need it?

- Capacity building - to better improve service offering for energy start-ups; build and strengthen energy businesses; place energy businesses in the focal point of national energy policies as solution providers
- Develop partnership & collaboration – to enhance quantity and quality of service provision to energy start-ups

When can we use it?

- Where a project is looking to directly influence and strengthen the local energy entrepreneurship/start-up ecosystem
- Where a project would like to strengthen and support local energy start-ups but lacks direct links and networks

3.5 Institutional support to entrepreneurship hubs / incubation centres: success factors

Building capacity

- To determine the best approach, a project should address clear gaps and needs of the hubs/incubation centre in supporting energy start-ups
- Key questions to determine gaps and needs could be:
 - ✓ does incubator already serve energy start-ups?
 - ✓ what's the level and type of their offering?
 - ✓ do they have technical/knowledge experts?
 - ✓ how well are they networked?
 - ✓ what kind of national policies are they working under (on energy)?
 - ✓ what resources exist and are accessible for energy start-ups?

Developing partnership and collaboration

- Clarity on the added value of forming the collaboration should be established – both for the incubator/hub and the project
- The role and contribution of each partner should be clearly articulated e.g.,
 - ✓ what will the GIZ project offer? Finance, expertise, access to networks?
 - ✓ what will the incubator/hub offer? Platform for GIZ to influence policy? Access to local networks and businesses?

Ensure a sustainable business model

- Increase the sustainability of your project by ensuring the hubs or incubation centres you are supporting operate on a sustainable model
- Include business development services in the institutional support offered to hubs and centres, ensuring financial sustainability after donor support has ended

3.5 Institutional support to entrepreneurship hubs / incubation centres: basic approaches to offering institutional support



Institutional building

- Governance & steering structure
- Personnel concept
- Strategic and operational planning
- Financial management



Capacity building

- Peer-to-peer exchange between innovation hubs and centres
- Training of trainers
- Creating dedicated mentoring and advisory renewable energy networks



Partnership & Collaboration

- Co-running bootcamps/workshops/masterclasses
- Supporting incubation & accelerator programs
- Matchmaking local and international/German start-ups to pilot solutions
- Offering access/avenues for hubs/incubators to acquire seed funding for the start-ups they support

3.5 Institutional support to entrepreneurship hubs / incubation centres: advantages, disadvantages and risks

Advantages

- Strengthens the **local energy entrepreneurship** and innovation ecosystem
- Creates a **sustainable environment** for the emergence and growth of energy start-ups
- Can be applied in **tandem with policy work** on things such as private sector engagement in energy transition
- Easy to draw and apply **GIZ's wealth of knowledge** on institutional building and management

Disadvantages

- Requires a **long-term approach** to achieve tangible results and therefore considerable resources
- As incubation centres are usually not bound to a specific technology, limited suitability to achieve (energy-)sector **specific results**

Risks

- Can create an **over-reliance** on donor funding by the hub/incubator to function
- Can cause **distortion of competition** with commercially run incubators and accelerators



Project Example

3.5 Institutional support to the establishment of an Entrepreneurship Hub at the Pan African University (PAU), Institute of Water and Energy Sciences (PAUWES)

Process for establishing the PAU Entrepreneurship Hub & draft 5 year operational plan

	2019	2020	2021	2022	2023
Organisational development					
- Hub concept development	■				
- Validation workshop		★			
- Advisory Board establishment		★			
- Entrepreneurship hub official launch		★			
- Hiring of hub staff	■	■			
- Inauguration entrepreneurship centre Tlemcen					
- Inauguration of PAU hub regional centres					★
Education & innovation					
- Curriculum and course review	★				★
- Curricular entrepreneurship course		■		■	■
- Extracurricular courses			■	■	■
- Transformative education & teaching innovation			■	■	■
- Online entrepreneurship certificates			■	■	■
- Staff trainings	■	■	■	■	■
- Supervision of project work & master theses		■	■	■	■
- Innovation challenges and competitions		■	■	■	■
Pre-incubation & business development					
- Business plan competition		■	■	■	■
- Mentor & assist selected students		■	■	■	■
- Mentor selected research groups		■	■	■	■
- Provide office space & facilities		■	■	■	■
- Advise on intellectual property (IP)		■	■	■	■
- Facilitate business funding		■	■	■	■
- Prototyping, lab testing & experimentation		■	■	■	■
Network, outreach & knowledge transfer					
- Policy recommendations & frameworks		■	■	■	■
- Knowledge transfer to other initiatives		■	■	■	■
- Communication & PR		■	■	■	■
- Hackathon (together with the UoT)		■	■	■	■
- Annual entrepreneurship day	★	★	★	★	★
- Alumni business tracking					
- Entrepreneurial talks & webinars					



Project Example

3.5 Success story 2: SolarKoodoo, Burkina Faso

- **Solar Koodo** develops and provides solar powered systems and services that help smallholder farmers produce higher quality crops.
- **Safiatou Nana, CEO** and founder of SolarKoodoo, is a graduate of the GIZ-supported Pan African University Institute of Water and Energy Sciences (PAUWES) in Algeria, supported by GIZ
- **GIZ supports PAUWES** in developing higher education, innovation and entrepreneurship activities for students and graduates – including the establishment of an entrepreneurship hub, innovation challenges, entrepreneurship bootcamps, design sprints, and participation of students in international events and competitions.



Source: PAUWES

Guideline for Working with Start-Ups in Energy Projects



4. Direct cooperation with start-ups

4.1 Direct cooperation with start-ups

4.2 GIZ instruments for direct collaboration

4.3 Further approaches for financial assistance to start-ups

4.1 Direct cooperation with start-ups

What is it?

- Is implemented in what can be termed as 'Open Innovation'
- Acknowledges that knowledge exists and can be created outside of established companies/organisations
- Recognises that sharing intellectual property between innovators and established entities is useful for different parties in different ways
- Appreciates that the more information is gained, the more educated the decisions made

Why do we need it?

- To support the business growth of energy start-ups while addressing a specific gap/need in the market for a known energy challenge, e.g., an energy efficiency solution
- Tap into an existing energy solution and accelerate its launch into market

When can we use it?

- Projects that are looking to focus on well established start-ups with sound innovations
- Projects that are seeking a win-win collaboration with the start-up(s)
- Projects that would like to pilot a specific solution to a pre-defined challenge

4.1 Direct cooperation with start-ups: success factors

Having dedicated, appropriate resources

- Identify the available and applicability of existing GIZ cooperation mechanisms to your project
- Explore alternative options for cooperation - to counteract challenges within the GIZ private-sector protocol , identify and involve a third party in the cooperation who has flexibility e.g., for direct transfer of financial support to the start-ups
- Start-up's contribution in kind can have equal worth to financial contribution

Win – Win Cooperation

- Cooperate with start-ups that have a clear need and interest and are aligned to the energy project goals and plans
- Draw on existing project partnerships to explore other opportunities that the start-up could benefit from
- Link up start-ups to international entrepreneurial ecosystem networks

4.2 Available GIZ instruments for direct collaboration

Link: [Overview of available GIZ instruments for collaboration with the private sector](#)



Service contracts

- Start-ups as consultancy service providers to GIZ
- Clearly defined tasks and deliverables, contributing to project goals
- Public procurement rules and GIZ contracting regulations apply



Financial agreements

- Receptient must be based outside of Germany
- Purpose of the project must be not-for-profit.
- 2 options:
- **Local subsidy:** for local and regional partners; limited to 100,000 EUR
- **Grant agreement:** For agreements above 100.000 EUR



Implementation agreement

- **Implementation agreement** with multinational, regional or local companies
- 50% of project value is paid by GIZ (<214.000 EUR)
- Applied in Integrated development partnerships with the private sector (iDPP) and develoPPP.de



Cooperation agreement

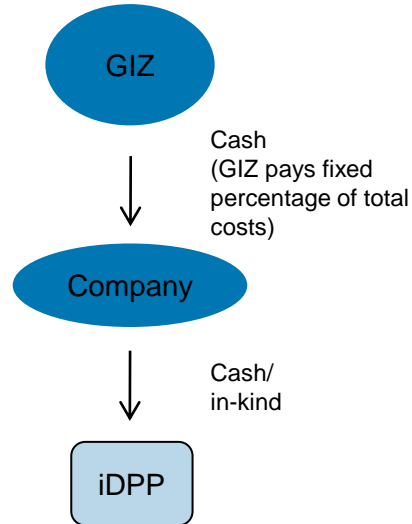
- Legally binding agreement for joint implementation of a programme
- **No direct financial contribution from GIZ**
- GIZ can finance procurement of equipment (<25% for develoPPP.de) and provide TA
- Also applied in iDPP and develoPPP.de

Direct financial contributions to start-ups are challenging within GIZ. Several projects reported the need for tailored GIZ instruments.

4.2 iDPP contract types

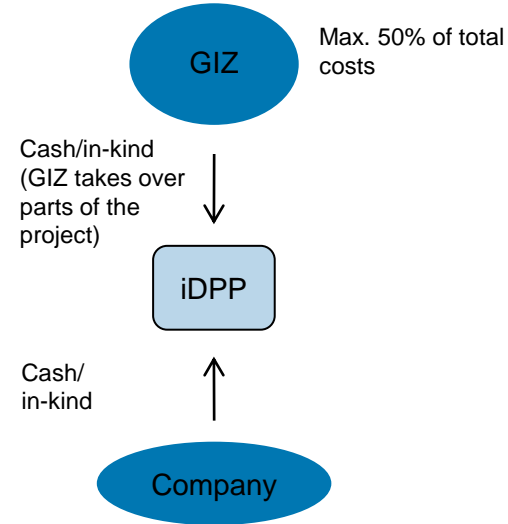
iDPP implementation agreement up to 214,000 EUR GIZ contribution

Max. 50% of total costs



- Implementation by private partner
- Partner reports on overall costs; yearly audits
→ more bureaucratic
- Contracting by contracting units (head office, local office)
- Rules and templates in P+R rule 124

iDPP cooperation agreement (no maximum value)



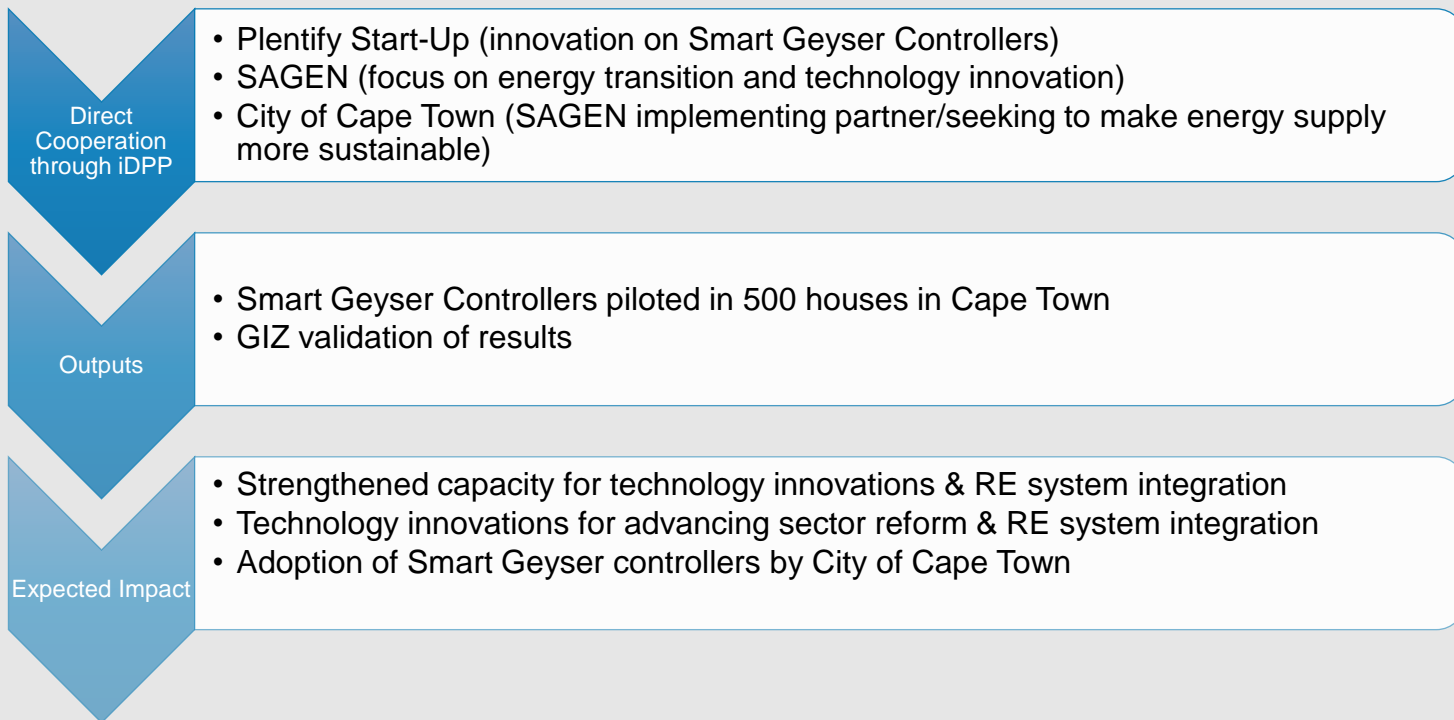
- Joint implementation (bring in GIZ expertise, influence)
- Partner reports on own financial contributions (no audit, trust basis)
- Contracting by TC programme
- Rules and templates in P+R rule 122

Source: GIZ-iDPP



Project Example

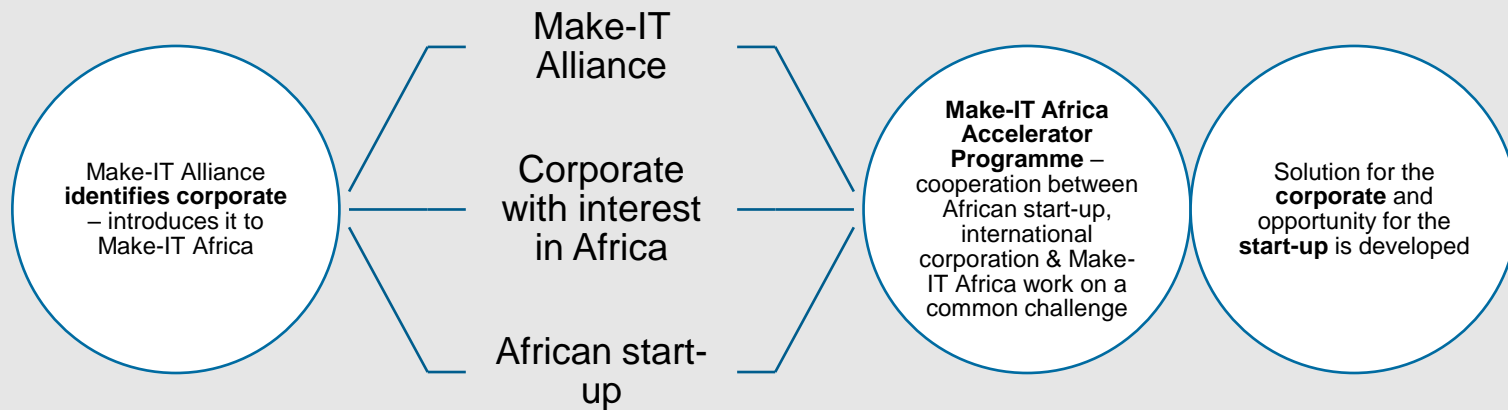
4.2 Cooperation Agreement with energy start-up at South African German Energy Programme (SAGEN - CET)





Project Example

4.2 Direct cooperation with start-ups: Make-IT Africa



4.3 Further approaches for financial assistance to start-ups



Through partner organisations

- Other donors & development partners are less restricted in financially supporting private sector partners
- GIZ can pick up s
- *Project example:* WE4F: Cooperation with USAID



Facilitation of finance

- Provision of technical assistance in accessing third party financing instruments – e.g. through information, coaching, due diligence
- *Project example:* GET.invest Finance Catalyst (not start-up specific)



Procurement of equipment

- Procurement of equipment for partner organisations (e.g. industry associations)
- Start-ups can benefit from industry association's resources
- *Project example:* Morocco - Accompagnement du plan solaire marocain (completed)



Focus on R&D

- Instead of focussing on the business aspect of start-ups, financial support can be provided to (non-profit) R&D institutions
- This can trigger the creation of spin-offs, and contribute to the start-up ecosystem development
- *Project example:* H2 Brazil: Creation of a H2 Innovation Fund for R&D (planned)



Guideline for Working with Start-Ups in Energy Projects



5. Conclusions

5.1 Key takeaways for energy start-up support and collaboration

5.2 Success stories – energy start-ups supported by GIZ

5.3 General observations during toolkit compilation

5.1 Key takeaways (1)

- ✓ Ground the support activities on a thorough understanding of the local [entrepreneurial ecosystem](#)
- ✓ Make sure to clearly define your [target group & expected outcomes](#)
- ✓ Exchange and collaborate with [GIZ projects and experts](#) experienced in working with energy start-ups
- ✓ Consider the different [stages of the start-up development](#) process and adapt the support and collaboration activities to the respective needs and capabilities
- ✓ Consider a multi-level approach, combining different [types of support activities](#) and the ensure the scalability of your approach
- ✓ Include relevant energy & innovation [ecosystem players](#) in an inclusive strategy development process – ensuring a well-coordinated approach in implementation

5.1 Key Takeaways (2)

- ✓ Consider new developments in the energy sector and recent [trends in the start-up scene](#); make use of new technologies and digitalize, where appropriate
- ✓ Increase the financial sustainability by ensuring that [supported partners institutions](#) are relying on a sustainable business model.
- ✓ Apply best practice of tailored [entrepreneurial capacity building](#)
- ✓ Especially when stand-alone events such as innovation challenges, also consider subsequent support to or long-term [direct collaboration with start-ups](#)
- ✓ Ideally combine start-up and entrepreneurship support measures with [access to finance](#) or facilitation of funding
- ✓ Accept failure. Starting a business comes with the risk of failure - the same applies for start-up support programmes!

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