Dii Toolkit Initiative
## Document History

### DOCUMENT CHANGE HISTORY RECORD SHEET

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---|-------------|-----------------------|-----------|-------|
Author | Fadi Maalouf | CTO - Director IPP & EPC | F2M2      | 21-Jan-2021 |
Outline

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Introduction
Dii Objectives

Desertec Industrial Initiative (Dii)
Launched in 2009 as a ‘not-for-profit’ entity in Germany for exploring the potential of renewables in the desert areas of MENA, improving market conditions and examining the synergies to be captured through connecting the European and MENA power markets. In 10 years’ time, Dii Desert Energy has grown from a rudimentary ‘Desertec Vision’, initially mainly concentrated on power from the deserts for Europe, (Desertec 1.0) via a focus on the conditions of renewables in the local markets (Desertec 2.0) toward a highly recognized market enabler for ‘green electrons’ and ‘green molecules’ from the deserts of MENA for MENA’s own population, and for MENA to become a ‘Power House’ for the world markets (Desertec 3.0). Today, Dii Desert Energy are looking at the entire power system starting with various forms of Renewable Energy (RE) generation, grids, new technologies & innovations, energy storage, e-mobility, smart cities, towards the long-term objective of ‘energy without emissions’.

Dii Vision
Increased competitiveness of renewables shall swiftly lead to economic growth and secure 100% energy supply without harmful emissions or waste.

Our Mission: No Emissions!
Towards a fully emission free energy supply in MENA before 2050 and making MENA a ‘power house’ for the global energy markets offering benefits to the region.

Dii Strategy
Connecting the international industry active in the MENA region with authorities and institutions. Focus on practical conditions for ‘green electrons’ and ‘green molecules’ along the energy value chains leading to tangible and profitable projects and other benefits for local and international stakeholders.

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Dii Toolkit for RE Grid Integration, Project Development & Industry Localization
Introduction

Dii Partners

Shareholders

Associated Partners
In the ever-evolving energy markets, the power of information and in particular know-how, innovation, & collaboration, are key success factors.

**Objective: Accelerate RE Implementation**

- So What Is The Bottom Line?
- Use Top Down Analysis
- Q&A To Establish Workflow!
Why Toolkit?

Q: What accelerates RE implementation?
A: Creating RE project opportunities.

Q: Who creates RE opportunities?
A: By connecting RE talent to drive innovation.

Q: What is the basis RE talent?
A: Establishing RE Knowledge Base. This is the bottom line! A solid foundation!
Why Toolkit?

**PROCESS FLOW TO MEET OBJECTIVE:**

- **Establishing** RE Knowledge Base
- **Connecting** Talent to Drive RE Innovation
- **Creating** RE Project Opportunities
- **Accelerating** RE Implementation

The Dii Toolkit “Establishes RE Knowledge Base” thus enabling talent connection, opportunity creation, & therefore renewable energy implementation acceleration.

Dii Toolkit Initiative sets a solid foundation for achieving the goal of energy independence via renewable energy, therefore accomplishing Dii Objectives.
Dii's "Toolkit for Renewable Energy Grid Integration, Project Development & Industry Localization" is derived from Dii's partners as well as Renewable Energy (RE) industry expert professionals' know-how, experience, & best practices.

The objective of the Dii's Toolkit is to provide RE industry stakeholders, both private and public, with access to state-of-the-art measures & techniques (tools) which enable accelerated and smooth integration of large amounts of renewable energy into existing power grids & ensure tangible and durable benefits to the region.

**Dii Toolkit scope of work includes:**

- **Tools & checklist** for bankability of RE projects, system requirements for RE grid integration, operators' technical capability to manage high levels of variable RE generation, local industry & job creation & retention factors, business transparency factors.

- **Practical tips** on project development, public and private procurement and localization, thus assuring: best value for money, industry involvement, job creation, sound financing, transparency & build of trust amongst stakeholders.

- **Planning for gradual increase of RE generation** at local, national, regional and international scale.

- **Country case studies & sharing of know-how & expertise.**

- **The Toolkit database will be available at Dii’s website platform,** exclusively for Dii’s partners & network members.
Toolkit Approach

- Dii Toolkit Approach to Creating Value and Knowledge Base
- WHAT TO DO vs. HOW TO DO

WHAT TO DO?    HOW TO DO?
Toolkit Approach

WHAT TO?

Objective: Trip from A to B

HOW TO?

Limited

Comprehensive View

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Dii Toolkit for RE Grid Integration, Project Development & Industry Localization
Recent Toolkit Publications
How To?

IPP Solar PV Project Development Roadmap
8-Phase Bankable Approach!

Pre-Feasibility Study
LCOE Financial Model

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Recent Toolkit Publications

How To?

Strategic Business Plan
for IPP / EPC Renewable Energy Company

Project Finance Management Plan
for Utility Scale Solar PV Power Plant
Recent Toolkit Publications
How To?

Trending! SunBurn Test™
Integrating Climate Change in Capital Budgeting for PV Plants

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Dii Toolkit for RE Grid Integration, Project Development & Industry Localization
Recent Toolkit Publications
How To?

Technology and Trends for RE Industry 2019

Dii Toolkit for RE Grid Integration, Project Development & Industry Localization
Recent Toolkit Publications
How To?

**LCOH Financial Model Toolkit V5**
*Green Hydrogen Production*

**LCOH Financial Model Toolkit V6**
*Green Hydrogen Production & Delivery Infra Pathways*
Recent Toolkit Publications
How To?

GREEN HYDROGEN
Innovative Financial Model Toolkit for Analyzing Levelized Costs (LCOH)

Tornado Chart - LCOH $/kg H₂

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Dii Toolkit for RE Grid Integration, Project Development & Industry Localization
Recent Toolkit Publications

How To?

LCOA Financial Model Toolkit V7
Green Ammonia Production
Joint Study for Integrating Renewables in GCCIA Gird
Recent Studies
Thank You

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