

Local Manufacturing Potential for CSP Projects in MENA

-Summary-

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<http://www.internationalrivers.org/files/images/cover-photo-web.jpg>



<http://www.flickr.com/photos/worldbank/>

Motivation: The Need for a CSP Home Basis in MENA

MENA could benefit from a new, high potential industry if the region's advantages are exploited and the barriers can be overcome:



The overall high potential for the application of the CSP technology itself



Proximity to other booming markets and unique position close to Southern Europe



Cost advantages: favorable labor/transport/energy costs

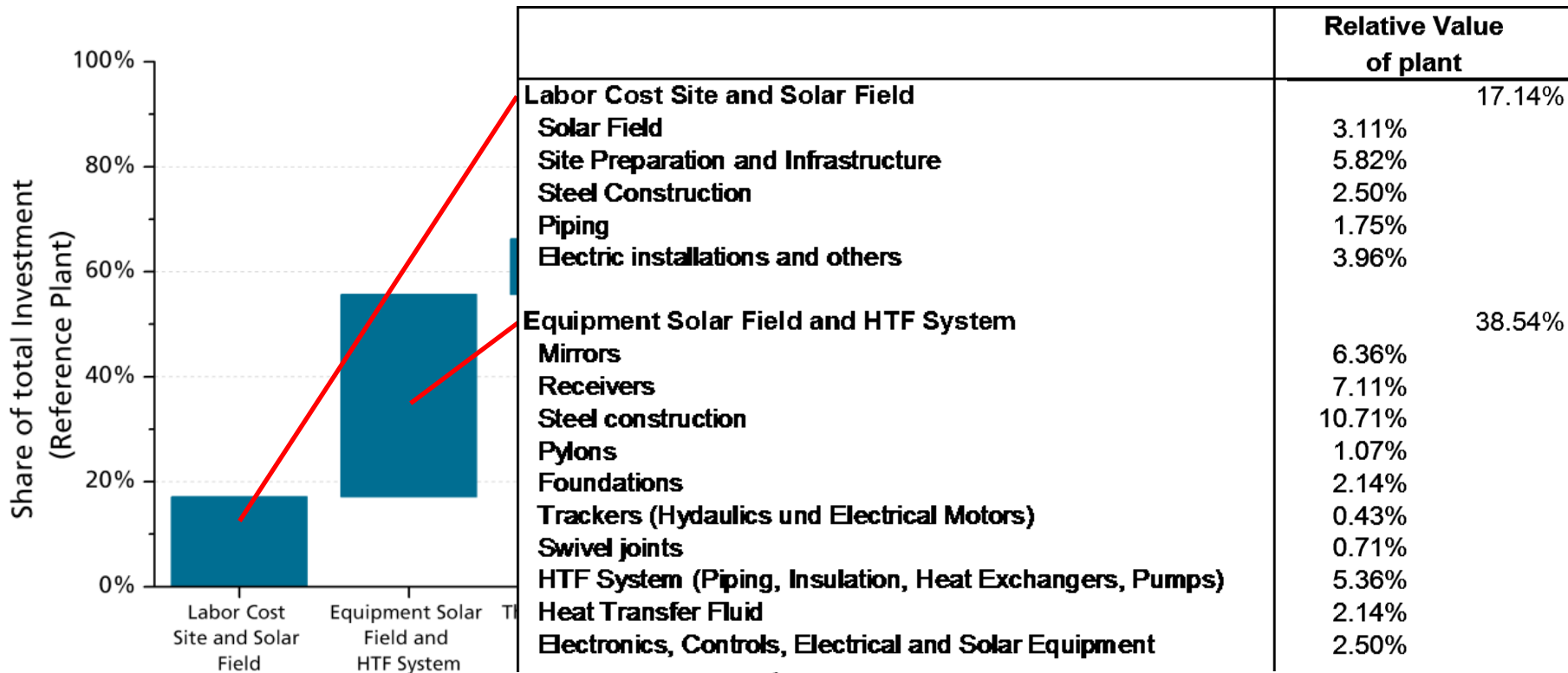


Mostly broad availability of required raw materials for CSP components



Experience of international CSP actors in the region

Value Chain Analysis



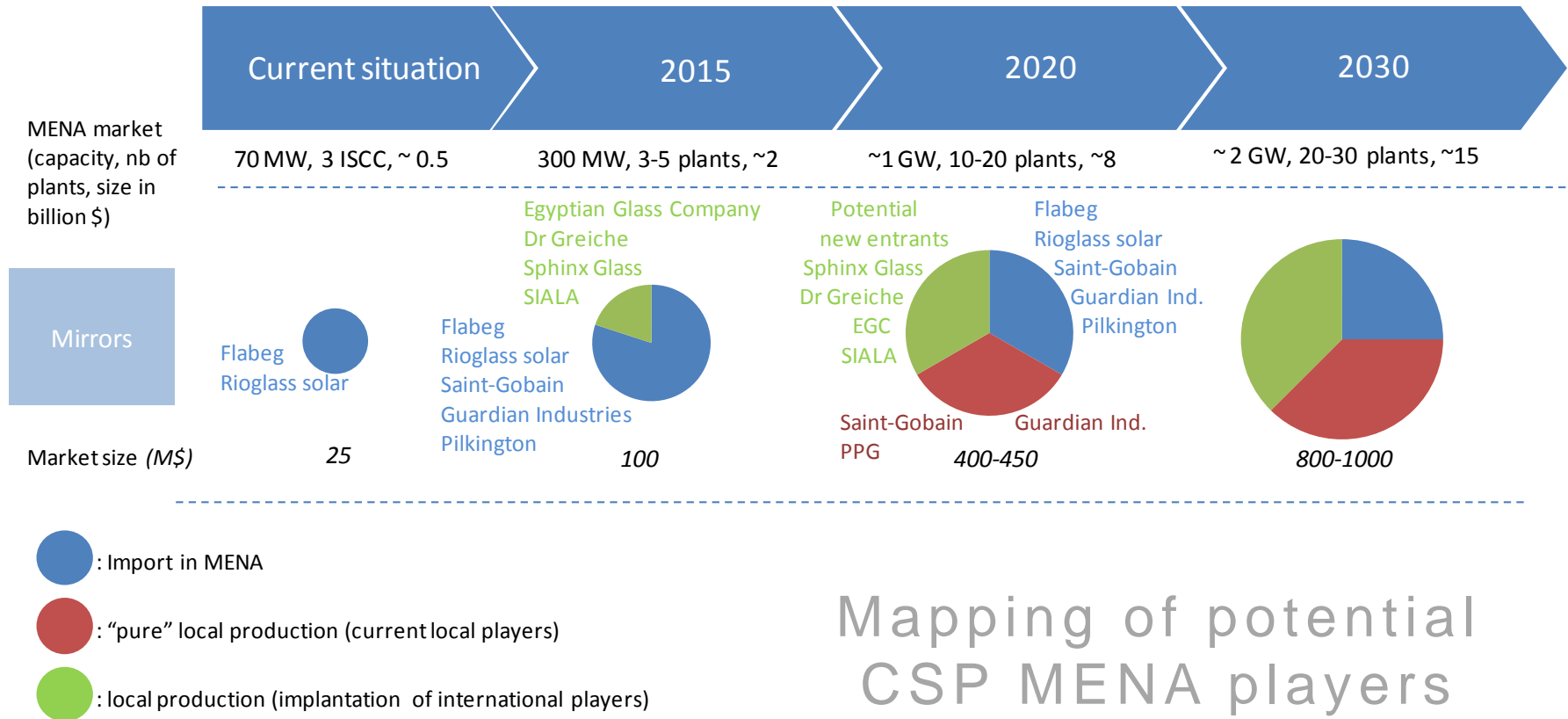
Industry Capabilities for CSP Components and Services

Learning with first ISCCS projects:

- Growth of CSP experience and know-how.
- Components for collector steel structure partly supplied by local steel industry.
- Workforce trained on the job; progress in engineering capacities.
- Also other parts (e.g. of the piping system) are already produced locally.



Industry Capabilities for CSP Components and Services



Mapping of potential
CSP MENA players
Glass and Mirrors

Conclusions Value Chain Analysis/Industrial Capability

Near-term: Low-Investment and Low-Complexity Activities in MENA:

- Collector Assembly
 - Collector Installations
 - Civil: Groundworks, Collector Foundations, Buildings, Infrastructure
- ⇒ approximately 17% of plant invest (+ optional EPC, Proj. Management)

If sustainable MENA-CSP-Markets are given:

- More investment-intensive and more complex CSP-Activities in MENA:
- Mirror Production
- Receiver Production
- Other specialized components and processes

⇒ up to 80% of plant invest

**Precise definition required
for „local manufacturing“**

Economic Benefits of Local Manufacturing in MENA

	Optimistic scenario (5GW by 2020 + export)	Medium scenario (1GW by 2020)	Pessimistic scenario (0.5GW by 2020)
Share of local manufacturing (average)	Total potential of local manufacturing of CSP plants could reach nearly 60% as average value for all CSP projects	Main CSP components remain imported, only construction, project management and basic engineering	Local share is limited to about 27 % of the total investment for construction and components
Impact on GDP	Total economic impact of 14.3 bn US\$	Total economic impact of 2.2 bn US\$	Total economic impact of 0.9 bn US\$
Labor impact (cumulated)	>180,000 one-year jobs	33,000 one-year jobs	4,500 one-year jobs
Foreign trade impact	3.3 bn US\$ + job creation	-	-

Competitive weaknesses of CSP value chain in MENA region



- ▶ Market size not guaranteed and not easily predictable
- ▶ No fiscal, institutional and legislative framework for RE development
- ▶ Lack of financial markets for new financing
- ▶ Partly insufficiently developed infrastructures
- ▶ Insufficient training of workforce and availability of skilled workers
- ▶ Lack of informational awareness of management on opportunities in the CSP sector
- ▶ Still weak links between the R&D and the economic sector

Roadmaps & Action Plan for CSP Local Manufacturing in MENA

Goals:

Facilitation of skill enhancement & knowledge transfer

Activation of further market players

Upgrade and increase of existing industrial- & service capacities

Elements in government/private sector initiatives:

- **Egyptian** Prototype CSP und Scientific & Technology Development Fund (Faculty of Engineering/University of Cairo). enerMENA project (multiplication of local know-how)
- **Algeria:** Strategic CSP development programme up 2019
- **Moroccan Solar plan** (2000 MW): attract sub suppliers,R&D networks, ...Integrated industrial platforms
- **Jordan:** Taxation strategies
- **ORASCOM:** Strategic view on develop and experience local manufacturing wherever possible
- **Elsewedy Electric:** Regional/global championship (wires, cables...)...or how to fill large shoes !
- **CSP industry:** Stable frame. Employment creation. Orascom/Flagsol and other cooperation

Overall Conclusions for Local CSP Manufacturing in MENA

- Success of the CSP scale-up initiative is key for providing seed for a CSP home basis in MENA **but not enough**. Production threshold issue.
 - A variety of national and international initiatives are on the way. The regional market size is the key driver for the development of a CSP industry and determines the benefit for the local economies.
 - Linking energy and industrial policies. Regional cooperation. “Leap-frogging”: Fresnel, multi-layer metal mirrors...
 - Other markets for renewable energies have shown similar scenarios of creating a local industry:
 - Photovoltaic industry in Germany and wind industry in Denmark
 - Wind/PV industries in other emerging countries like China and India.
 - A similar development in the MENA region could be promoted by the action plan for CSP projects and their local manufacturing discussed in this report.
 - There are reasons for being a pessimist...but there are also sufficient elements of hope which need to be strengthened by the CTF and national initiatives .
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Thank you for your Attention!

***Particular thanks to the
presenters from local and international industry and from governments to
have accepted our invitation and to contribute to the information gathered
in the workshop.***

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