NOVATEC BioSol AG

Presentation – Nov 2007

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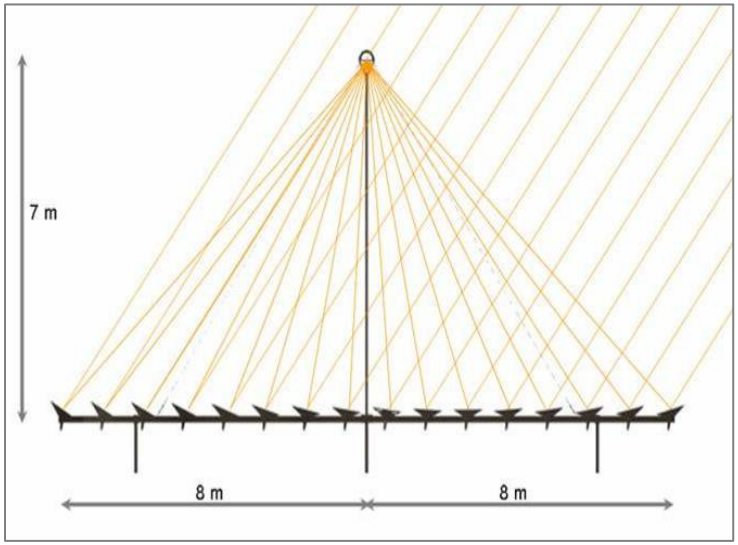
Technology Description

Novatec's patented solar steam generator technology is based on the principle of linear Fresnel reflection. It uses glass mirrors which are almost flat. During manufacturing, flat glass mirrors are bonded to a virtually flat structure. Sixteen (16) parallel lines of mirrors (primary reflectors) are arranged in such a way to reflect direct solar radiation to a secondary mirror and receiver which are mounted above the primary reflectors.



Cross section of a gang of 16 solar reflectors

Demonstration plant in South of Spain

The energy efficiency of the solar steam generator has been proven at a demonstration plant. This plant has had its thermal output and efficiency measured by the DLR, the German Aerospace Center, a German Government research organisation.

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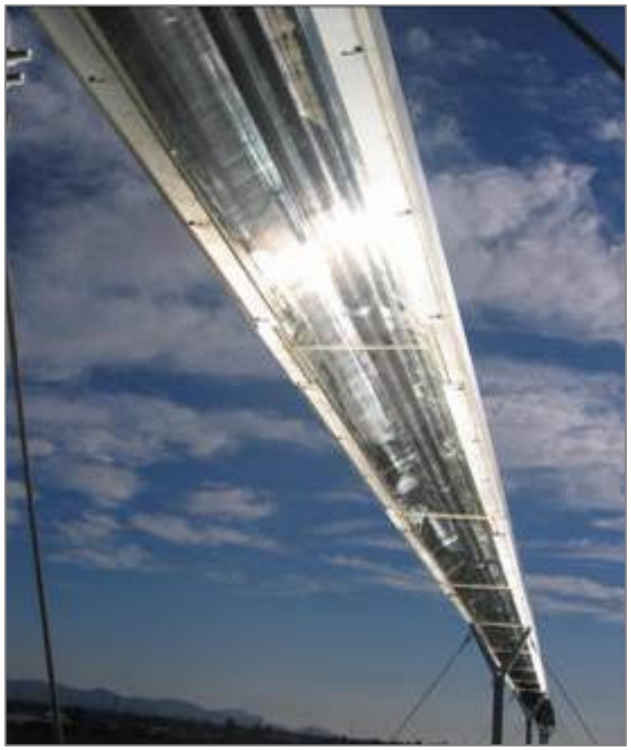
Technology Description

Water is pumped through the collector absorber tube, generating steam directly



Receiver showing steam generation at demonstration plant in Spain

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Novatec BioSol's Uniqueness

Automated solar field component production system

- developed and patented for high-volume production of primary reflector mirror elements
- Automated system being commissioned at subcontractor's facility in Germany
- Production line to be relocated to vicinity of future power plant; this will allow
- utilization of local workforce
- short-distance transport to site of bulky primary reflector elements

- Allows for rapid deployment of high quality and precision elements
- Uses local semi-skilled labor
- Ability to rapidly adapt to scale requirements in a modular fashion (140,000 m² of solar field for each 15 MW electricity produced)

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NOVATEC BioSol Technology Benefits

1. **Improving Economic Benchmarks**
   - Fresnel collectors suitable for high-volume scalable production
   - Simplified system of concentrated solar steam generation

2. **Rapid Project Implementation**
   - Flexible high-volume production lines close to target markets
   - Meeting and exceeding economic targets even with 15 MW air-cooled power plants

3. **Client-friendly Partnership**
   - Provision of turn-key solar steam generators / power plants
   - Engineering support for system implementation
   - Supporting development with appropriate funding strategy
   - Long-term commitment through O&M capability

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NOVATEC BioSol's Spanish Market Strategy

1. Completing high-volume production line (capable of producing primary elements for 25 MW per year) in South of Spain in March 2008, to be followed by additional production lines

2. Start-up of 2 MW Novatec solar thermal power plant in mid 2008

3. Novatec is developing CSP plants with a total capacity of 90 MW

4. Expand solar field production capacity in Spain initially to 110 MW per year by 2009

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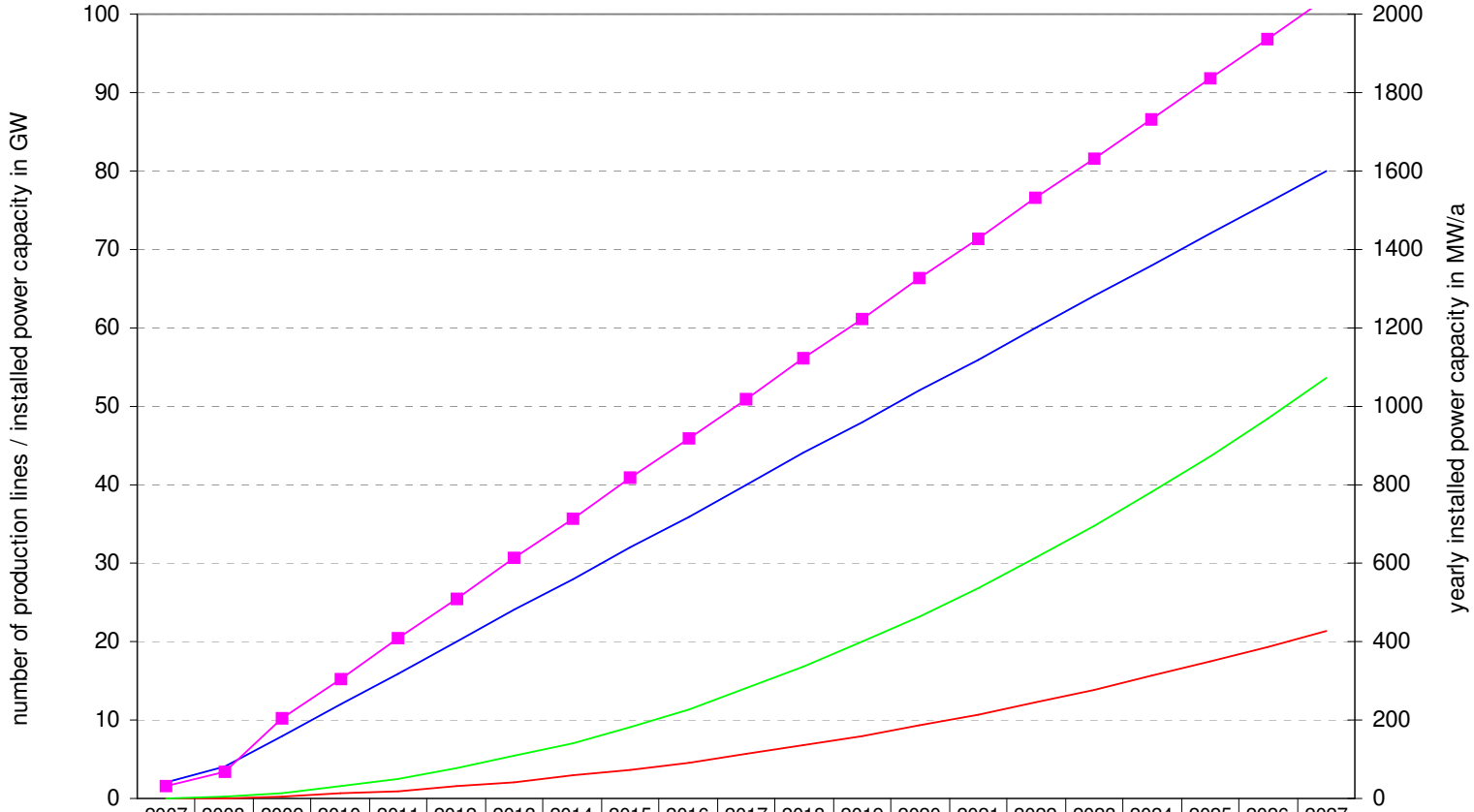
Scenario of implementation CSP technology by NOVATEC BioSol in Egypt



calendar year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
production lines	2	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	76	80
installed power capacity (GW)	0,0	0,1	0,3	0,6	1,0	1,5	2,1	2,9	3,7	4,6	5,6	6,7	8,0	9,3	10,7	12,2	13,9	15,6	17,4	19,4	21,4
power production (TWh/a)	0,1	0,3	0,8	1,5	2,6	3,8	5,4	7,1	9,2	11,5	14,0	16,8	19,9	23,2	26,8	30,6	34,7	39,0	43,6	48,5	53,6
produced power capacity (MW/a)	34	68	204	306	408	510	612	714	816	918	1020	1122	1224	1326	1428	1530	1632	1734	1836	1938	2040

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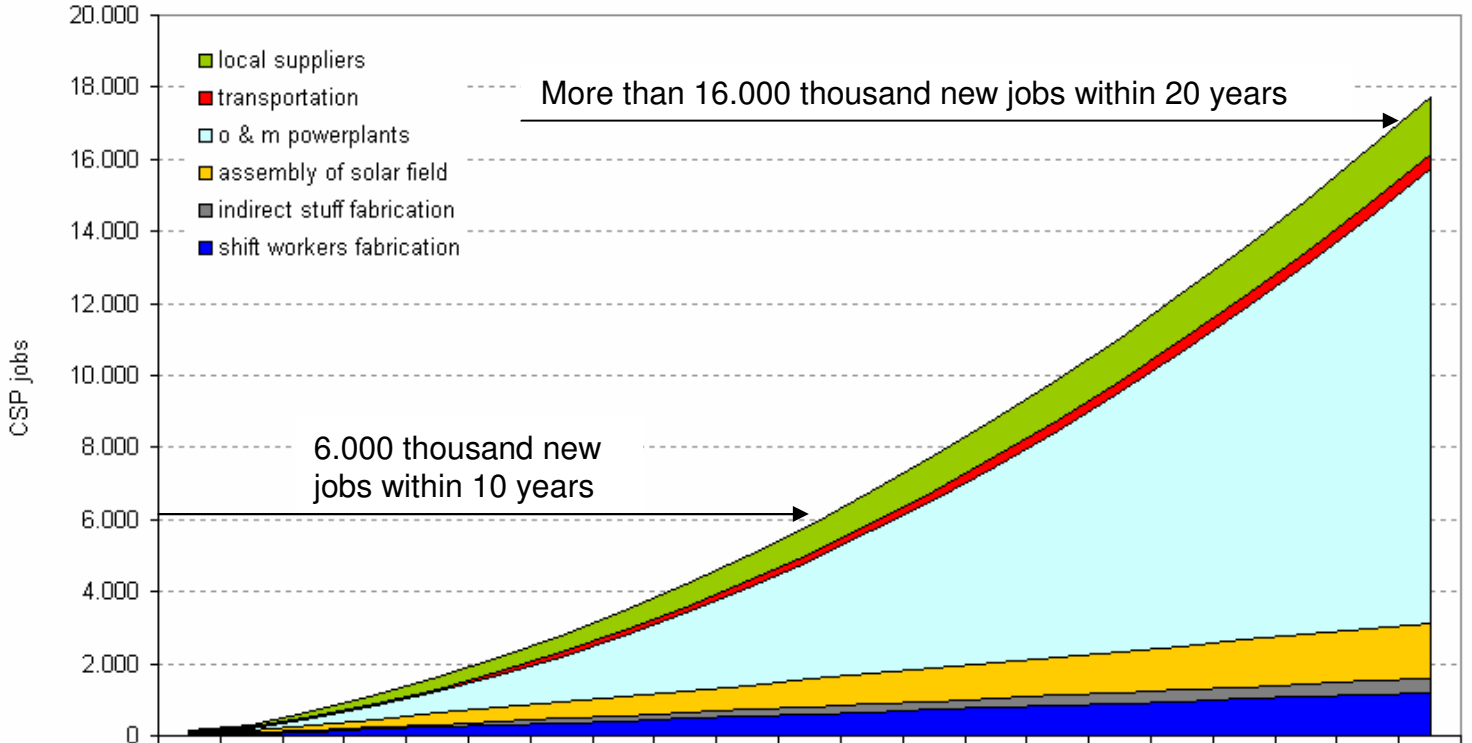
Job effect caused by implementation of NOVATEC BioSol´s CSP technology in Egypt



	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
local suppliers	40	80	160	240	320	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360	1440	1520	1600
transportation	10	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
o & m powerplants	20	60	180	360	600	900	1260	1680	2160	2700	3300	3960	4680	5460	6300	7200	8160	9180	1026	1140	1260
assembly of solar field	38	76	152	228	304	380	456	532	608	684	760	836	912	988	1064	1140	1216	1292	1368	1444	1520
indirect stuff fabrication	10	20	40	60	80	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400
shift workers fabrication	30	60	120	180	240	300	360	420	480	540	600	660	720	780	840	900	960	1020	1080	1140	1200

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Novatec BioSol Mission Statement

Novatec BioSol AG excels at providing highly efficient, low-cost solar fields for fully integrated solar thermal power stations and associated applications.