



Presentation de Zenith Solar

- December 2005 :Sde-Boqer, seed has been planted
- July 2006 : Founded by Roy Segev & Prof.Faiman
- December 2006 : “Seed” round (\$2M)
- April 2007: Strategic agreements, Azur space and ISE
- September 2007 : Z10 prototype up and running
- June 2008: “A” round of financing (\$8M)
- October 2008: First serial produced Z20
- January 2009: 41.1% 3J world record by ISE
- April 2009 : Yavne site fully deployed



Zenith system



- 1,000 x concentration
- Efficiency 70%
- Lowest €/Wp
- Upgradable on site
- Z20, 4.5kWp (e) + 11kWp (t)
- 3J GaAs solar cells 35% (e)



21% Electric output



50% Thermal output

Chaleur et Electricité



Ville Israelienne Yavne Systeme

- 32 modules on 16 Z20 systems
- Field installation addressing 250 family homes
- Centralized water heating system
- Replacing 40,000 liters/annum of fossil fuel
- 2,000 hours of direct sun annually (DNI)
- Installation will generate 144MW of electricity (fed to the grid) and 350MW of thermal heat per annum
- Up and running since April 2009



Terrain operationnel

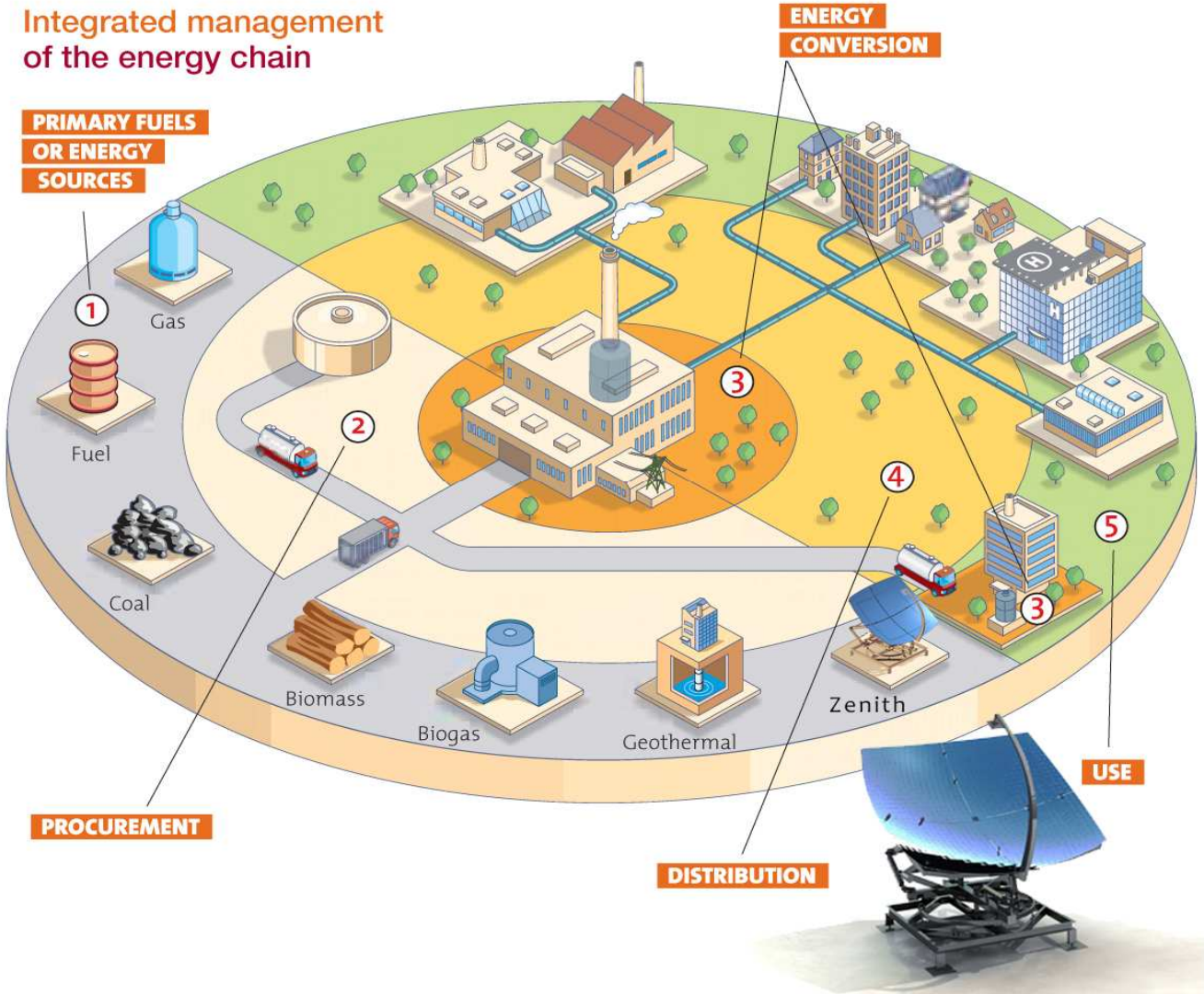


Gestion informatique des paraboles solaires équipé d'une station météo et suivi de la course du soleil



Municipal District Heating

Integrated management of the energy chain



Municipal CHP Power Plant

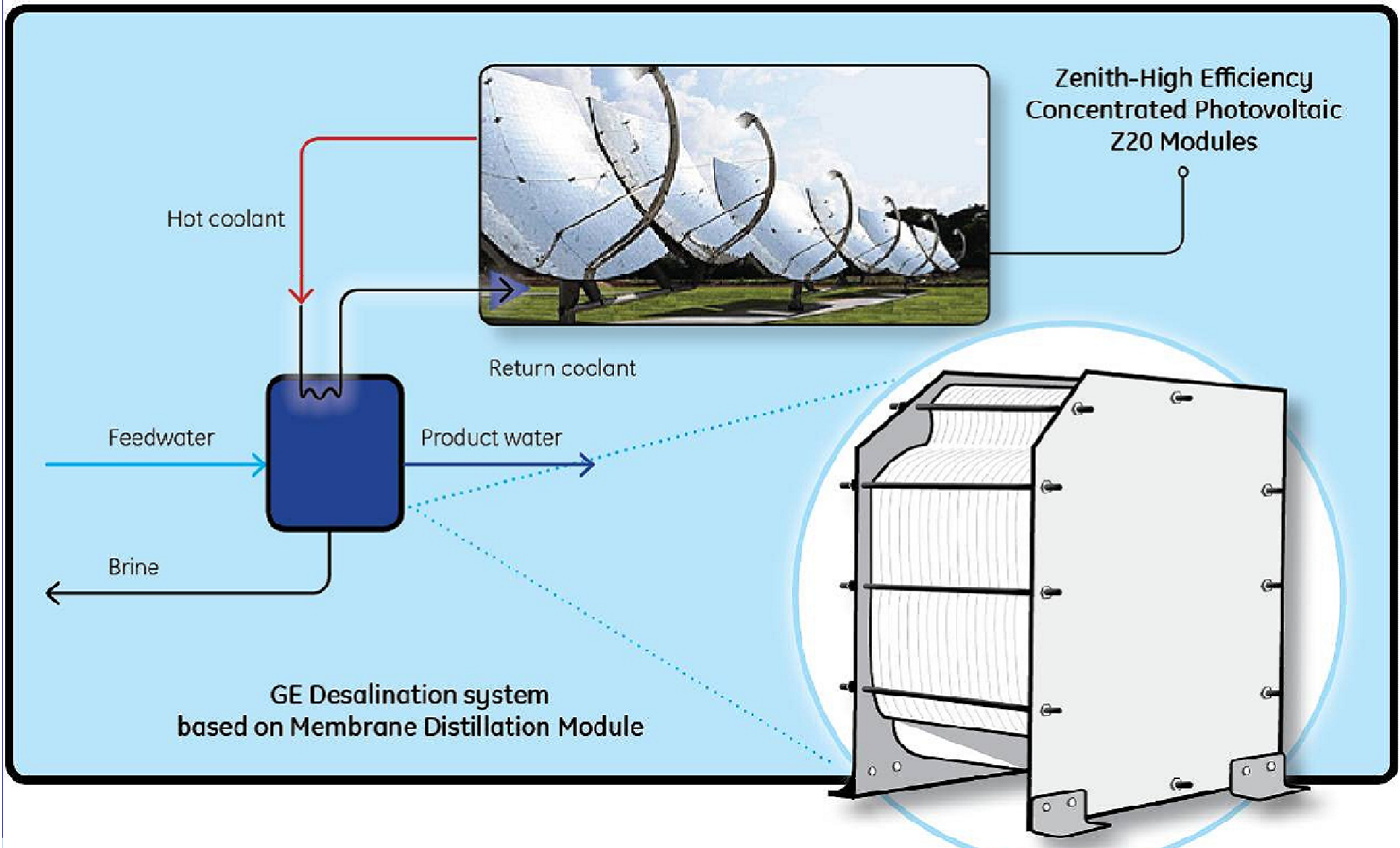
- Zenith CHP Central Power plant
- 1,000 Z20 systems on ~50,000 m²
- Energy Generation
 - 4.5 MWp electric
 - 11 MWp thermal
- Energie économisée sur un An
 - 9,000 MWh ~ \$1,000,000 (Electric at \$0.12 per kWh)
 - 22,000 MWh ~ \$1,500,000 (Thermal at \$0.07 per kWh)



Water Desalination / Purification

- Available off shelf technology for:
 - Seawater Desalination
 - Brackish water purification
- Energy needed: 35 to 65 kWh per 1m³/day, depending on hot water temperature availability.
- A single Z20 can produce ~ 2 m³/day

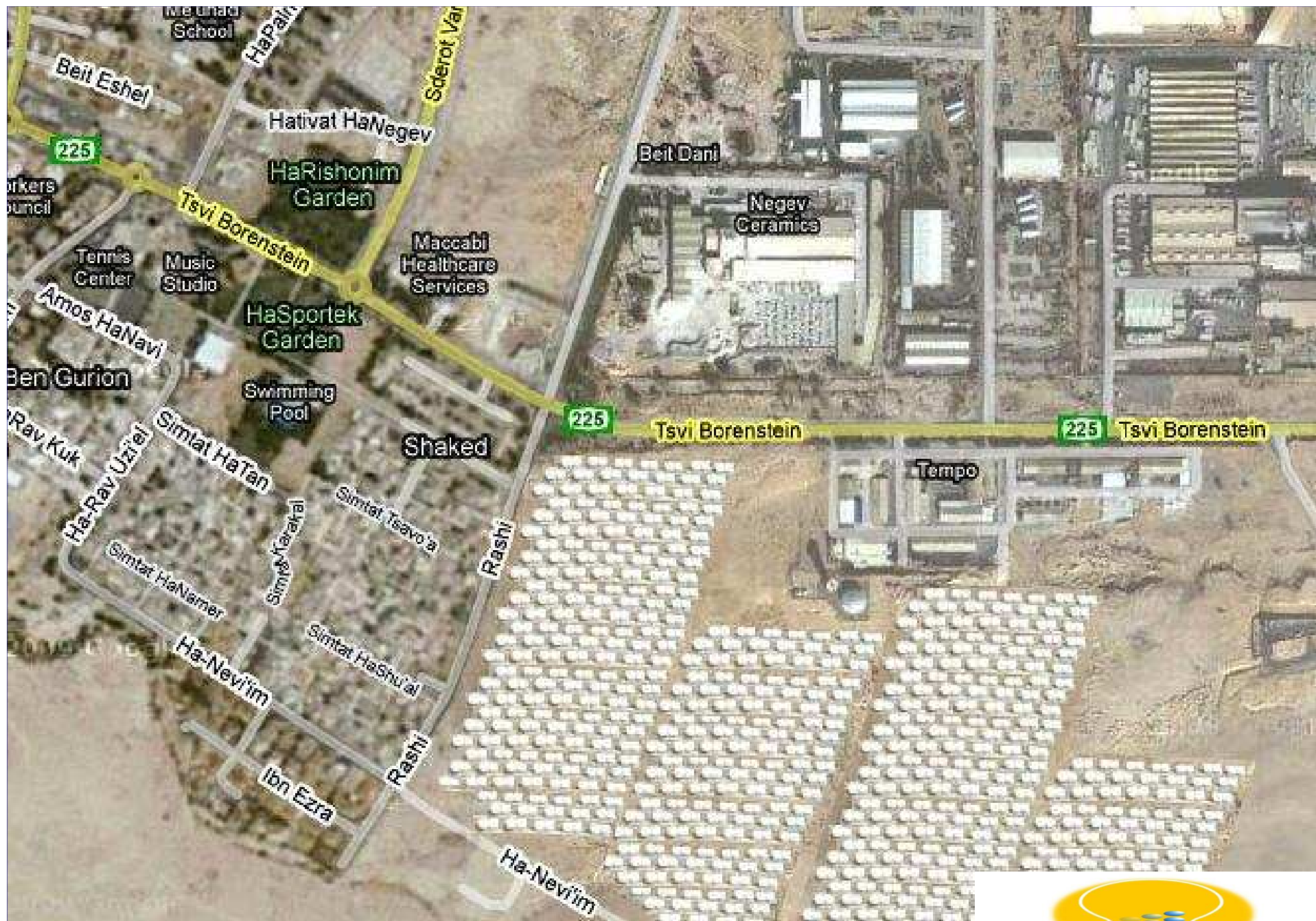
Combined Desalination & Power (CDP)



Solar Air Conditioning

- Technology based on absorption chillers is readily available
- Required temperature of the hot water source: 100 deg C, provides COP > 0.93 (COP=cooling efficiency)
- The higher the temperature of hot water the higher the COP
- Each Z20 is capable of generating approximately 2TR (Tons of Refrigeration) per hour at peak
- Cost of solar absorption chiller are estimated at \$2,500 per TR installed, dependent on system size





Les Applications de l'énergie Thermique

- 70 deg C:
 - Domestic and commercial hot water usage
 - Industrial use – preheating, process, etc.
- 100+ deg C:
 - Medium temperature hot water for industrial and commercial usages
 - Air conditioning
 - Desalination



Take away

- World class team
- Parity with energy costs today, generates energy at \$0.09 kWh (*)
- Simple payback @ today's Israel feed-in tariff less than 5 years
- Probably the only CPV company that is fully vertically integrated – strong/special relations with Azur Space
- Highly scalable from kWp systems to MWp installations

(*) 2,000 DNI per annum, 15 years amortization period



Champs de production potentiel

- Lotissement pour fournir de l'eau chaude et de l'électricité, collectivité chauffage urbain ,
- Réhabiliter des sites pollués coût de remise en état pour la dépollution important, possibilité d'une rentabilité ou des sites industriels en fin de carrière, ou des mines en fin d'exploitation
- Ou investissement très rentable

Aujourd'hui le solaire est une réalité et une source économique



Zenit Solar aujourd'hui permet de mettre les moyens pour apporter de l'électricité à faible coût, chauffer l'eau et aussi la climatisation et le dessalement de l'eau

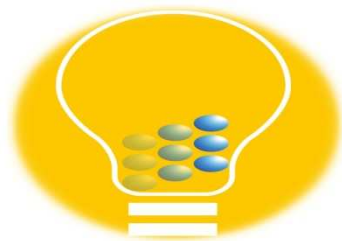


**La technologie la plus performante aujourd'hui
avec deux énergies électrique et thermique**

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