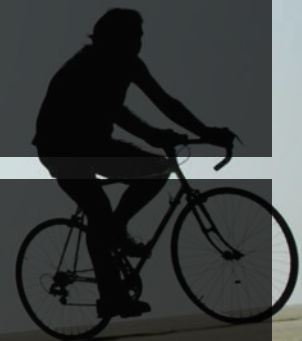




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Promotion of Solar PV Cooling in Burkina Faso

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Background

lefaso.net
L'actualité du Burkina sur Internet

Book hotel à
Frankfurt
momondo.dk

ACTUALITÉ | DÉBATS | EN IMAGES

International | Politique | Économie | Société | Sport | Environnement | Coopération | Culture | Multi

Proverbe du Jour : "Mieux vaut être au ban de tous les partis et de tout le monde que d'être complice." (Ceresole)

Google® Recherche personnalisée

Accueil > Actualités > DOSSIERS > Électrification au Burkina

Consommation en électricité en temps de pointe : Un besoin moyen de 217MW pour une capacité moyenne de 196 MW

Chronique du gouvernement

mercredi 14 mai 2014

La consommation en électricité au Burkina Faso augmente de plus de 13% par an. Le réseau interconnecté de la Société nationale d'électricité du Burkina (SONABEL) a aujourd'hui une capacité moyenne de 177 MW pour l'ensemble de son réseau interconnecté (plus l'énergie importée) pour une demande moyenne de 197 MW en temps normal et de 217MW en période de pointe (mars, avril et mai). Cette année la période de pointe s'est située au mois d'Avril avec une forte demande de 225MW.

Délestages: Le Burkina va louer des groupes électrogènes à une société américaine

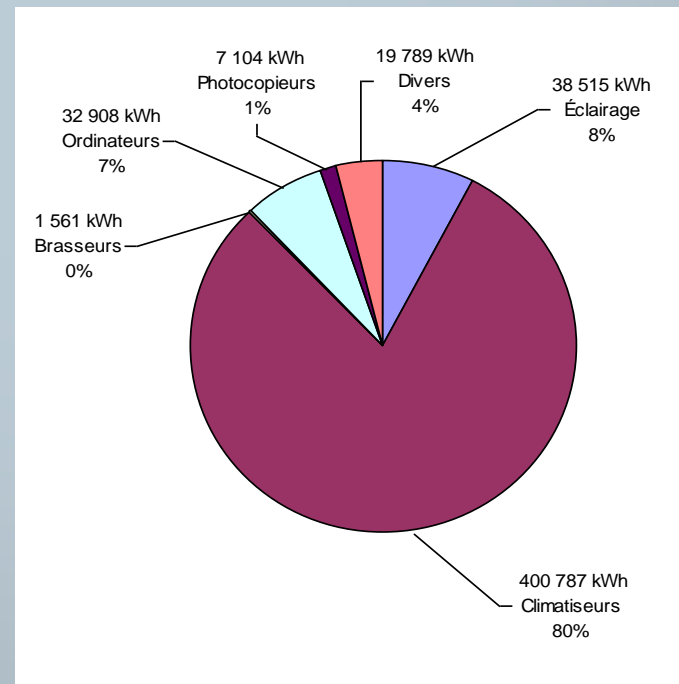
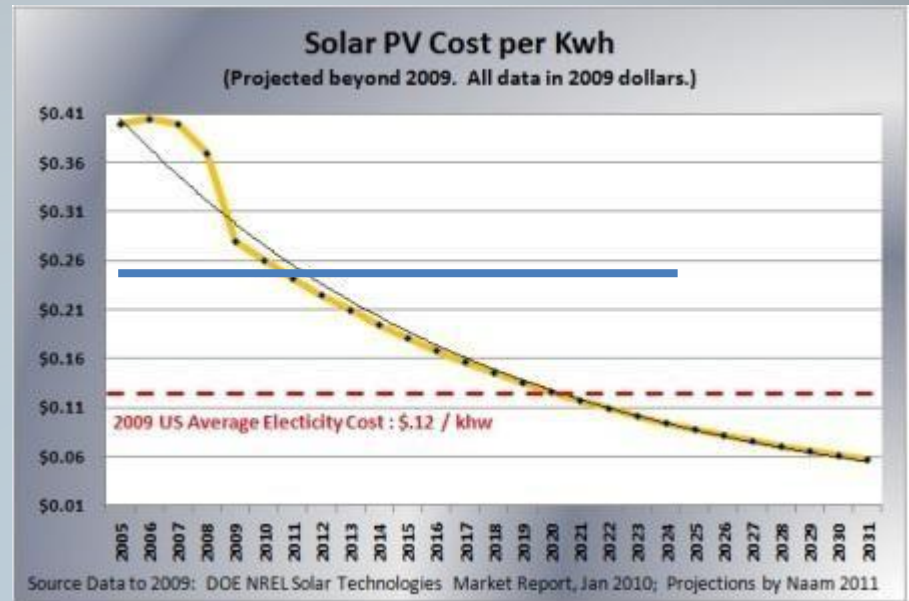
22 mars 2016 | Rubrique: Burkina Faso, Économie | Publié par: negro1er

Partager



L'entreprise américaine APR Energy a été retenue par le Burkina Faso comme adjudicataire du marché de la location de groupes électrogènes pour un montant d'environ 24 milliards de F CFA,

a appris APA auprès du ministère en charge de l'énergie.



The project

- Development and demonstration of two concepts for solar PV application in Burkina Faso:
 - 1) Solar PV kit for stand alone applications including small size air condition unit
 - Electricity supply independent of the grid
 - Full package with proven components
 - Replaces petrol/diesel genset
 - 2) Large size PV system for grid-connected buildings with power requirements for air-condition and other appliances (ESCO)
 - Reduction of peak load on the grid
 - Substitution of imported diesel for power plants
 - Less noisy cooling system, less refrigerant
 - Stable power supply

Project manager: DTI



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- Experience since 1989 on Solar PV and thermal
- Training courses
 - R&D projects
 - Approvals and certification
 - Quality assurance
 - Dissemination of information
 - Consultancy

DTI solar energy in B.F.



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- 2004-2007: Capacity building and establishment of a solar energy laboratory in Burkina Faso (IRSAT/ Danida)
- 2009: Technical assistance to IRSAT on a measurement programme for solar powered water pumps
- 2013-ongoing: Project on ecological food processing plant with solar and bio energy. Funded by NCF



Local Partner : ISOMET



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- Original idea from Isomet (local partner in Ouagadougou)
- Prototype built by Isomet (own office)



ISOMET projects

- Practical experience from several projects
- Solar parabolas for steam production
- Thermal gasifiers for steam production and electricity



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Other Partner : Unicoool



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- Expert in refrigeration technology
- Based in Denmark and Kenya, Rwanda, Tanzania
- Experience with PV driven cold store in Uganda
- Increasing activity in Africa



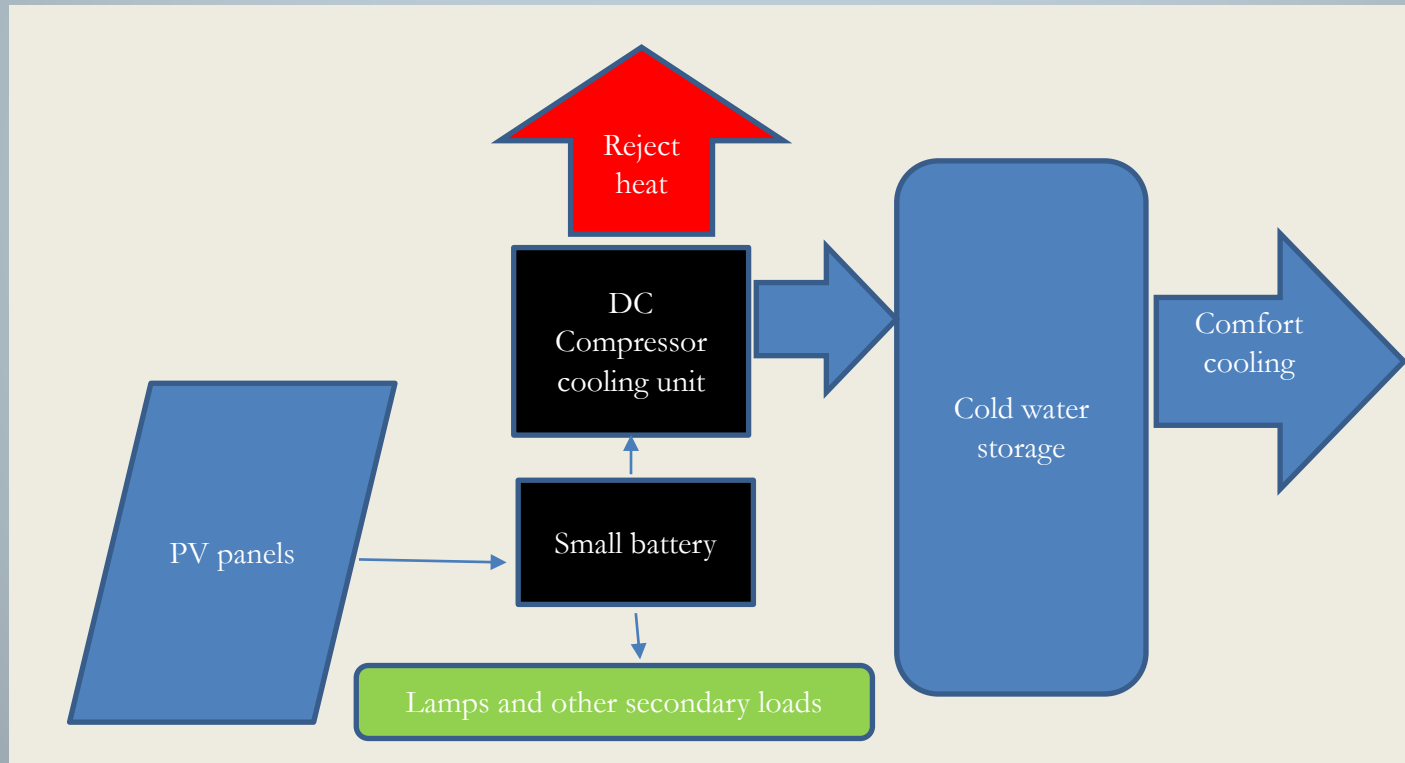
Photo from project in Uganda:
Solar powered cold room for storage of milk. The solution was designed to utilize almost only DC components to prevent efficiency loss due to inverting of the electricity. This required special 48V DC compressor and custom PLC control system. Furthermore, all operation data is sent to a cloud database, which then can be used to monitor the operation and alarm signaling to the client.

Demosystems



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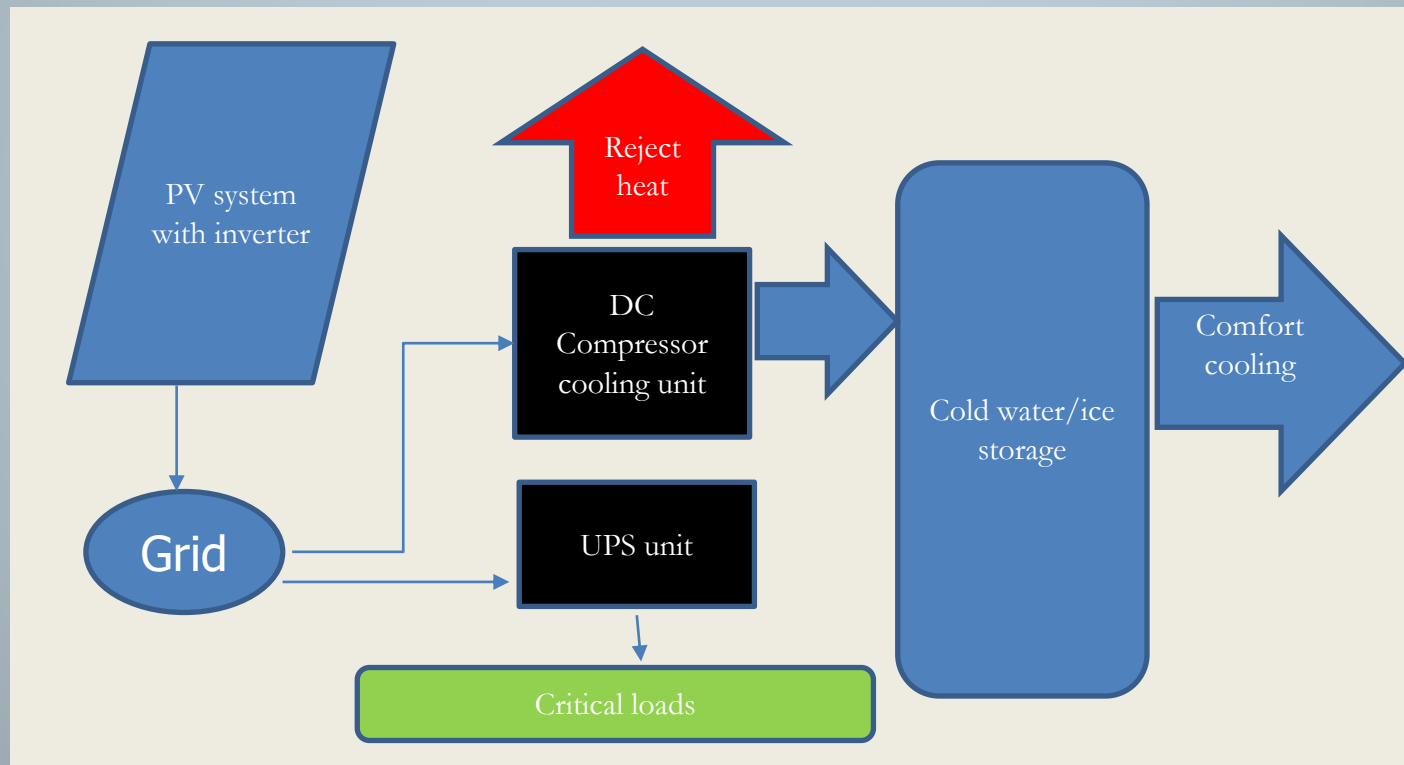
- Household kit



Demosystems



- Large system for office buildings etc.



Activities



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Activity 1. System design and demo site preparation

In the preparatory phase of the project, the main focus is to bring together the partners and agree on the basic design criteria for the two demonstration systems. ISOMET have already made a simple experimental system in their factory, and UNICOOL have valuable experience from Uganda that they will bring to the project. DTI will assist with necessary calculations and sizing and test the prototypes when they are ready. ISOMET will identify appropriate demo sites in Burkina Faso and arrange the field tests. The following activities are planned:

- A1.1. Technical partners meeting. A technical meeting is held to discuss the technical issues
- A1.2. Household system design. The technical team to agree on the appropriate household kit design
- A1.3. Office building system design. The technical team to agree on the appropriate office building kit design
- A1.4. Laboratory test of main components. The functionality of the main components is tested.
- A1.5. Simulation of representative system. The complementarity and the operability of the main components is tested.
- A1.6. First Design improvement. Necessary improvements are made and a new layout is designed
- A1.7. Visit to components providers. Possible suppliers of components are visited. Best component suppliers are selected
- A1.8. Supplier market definition. suppliers with best ratio quality /price are selected
- A1.9. Demo site preparation. The demo sites are prepared for the installations
- A1.10. Reporting. The first milestone report is filed

Milestone 1 : a) One laboratory test performed. b) Market report delivered

Activities

Activity 2. Demo unit implementation and long term tests

Based on the predesign and laboratory test, two units will be built for long term field test (6 months). The test will provide practical experience with the technical performance as well as the users satisfaction with the cooling service. DTI will help with instrumentation and test program. A mid term evaluation is planned, so that any malfunction or problems can be solved before end of the test run.

- A2.1. Construction of demonstration units. The demo units are physically implemented and functional
- A2.2. System test. The first tests will tell us if the implementation is well done
- A2.3. Technical meeting. The technical result of the first test are analysed and evaluated by the technical team, changes and improvements are proposed
- A2.4. System long term test and data collection. The long term tests will help assess the technical viability of the concepts
- A2.5. Midterm evaluation of long term test. The Midterm evaluation of the tests will inform us over the necessity or not to make adjustments
- A2.6. System improvement. The adjustments to be done are done. The system is improved.
- A2.7. Final evaluation of long term test. The final evaluation of the long term test will inform us about the technical viability of the concept
- A2.8. Reporting. The milestone report will finalize the Milestone period

Milestone 2 : a) Two units running 1 month. b) Field test report delivered.

Activities

Activity 3. System operation, business plan design, Clients and media presentation

When the intensive monitoring phase is terminated, the systems will be in normal operation without too much attention. The project will then concentrate the work on economic analysis of the results and promotion of the idea vis á vis investors, building owners and local media. The economic analysis and feed back will be used to develop a business plan for commercial provision of solar cooling in Burkina Faso.

- A3.1. System operation. The system is operated for demo
- A3.2. Bank visits. Convince the banks and discuss possible financing schemes
- A3.3. Institutions visits. Institutions are possible office building system clients, try to convince them
- A3.4. Private client visits. The household kit clients have to be convinced as well
- A3.5. Media presentation. The project and the commercial idea will have more feedback through the media presentation
- A3.6. Economical Data analysis. The economical analysis will inform us about the financial viability of the concept
- A3.7. Final technical meeting. The final technical Meeting will set the final technical evaluation of the concept
- A3.8. Business plan design. The business plan will set a clear path for the commercialization of the concept
- A3.9. Final Reporting. The final report will report on all the project, and will particularly highlight the lessons learnt during the project phase.

Milestone 3 : a) Business plan delivered b) Media presentation c) Final report delivered

Responsibilities



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	DTI	ISOMET	UNICOOL
Primary role	Project management	Local implementation	Product development & construction
Other tasks	Laboratory testing Simulations Monitoring	Business model Dissemination	Bring in hands-on experience from east Africa
Benefit	International references and experience	Market expansion and product diversification	New market in West Africa Synergy with other projects

Uncertainties



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- Political situation
- Competition from other technology providers
- Obstacles for ESCO business model
- Lack of skilled personnel

Implementation



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Implementation schedule

month	Implementation schedule																																																																																																Responsible
	1				2				3				4				5				6				7				8				9				10				11				12				13				14				15				16				17				18				19				20				21				22				23				24				
week	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4													
Milestone 1 : Household and office kit design, components test, demo sites preparation and supply market definition																																																																																																	
1	Technical partners meeting in Denmark																																																																																																DTI
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10	Reporting																																																																																																
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7	Business plan design																																																																																																ISOMET
8	Final technical meeting																																																																																																ISOMET
9	Final Reporting																																																																																																DTI

After the project period?



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- Isomet-Unicoool partnership
- Use the demosites for promotion/showcase
- Further development of ESCO model
- Further technical development and optimization. Cold stores?
- Partnering with other suppliers?
- Government support to large scale implementation?