

Customized software tool enables medical facilities to meet electrical demands

HOMER SaaS API

Challenge

When the coronavirus pandemic hit, developing countries urgently needed to meet the increased energy demands of treating an influx of critically ill patients. Health facilities with limited engineering resources now had to determine the electrical requirements of specific essential medical equipment and design a power system with the required capacity.

Solution

World Bank contracted with HOMER Energy by UL to update Powering Health — a complimentary online tool built with the HOMER SaaS application program interface (API). The online tool was initially designed in 2011 to make it easy for non-engineers to design hybrid renewable energy systems and find the least-cost power system.

To meet the needs of COVID-19 patients, in 2020 HOMER Energy by UL augmented Powering Health with an extensive database of energy requirements for common health clinic equipment.

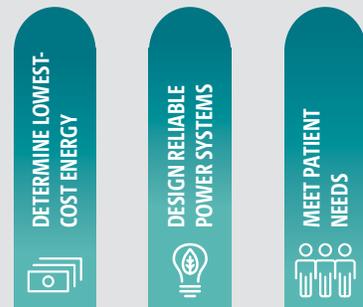
Impact

Using Powering Health, health practitioners can develop a power system to meet a facility's energy needs for the lowest cost. Users develop and load profiles using the extensive database of needed medical equipment and related energy requirements, and then identify the least-cost power system to reliably meet those loads. With access to right-sized electrical power, rural health clinics can better respond to patient needs and the most vulnerable countries can better address the ongoing crisis.



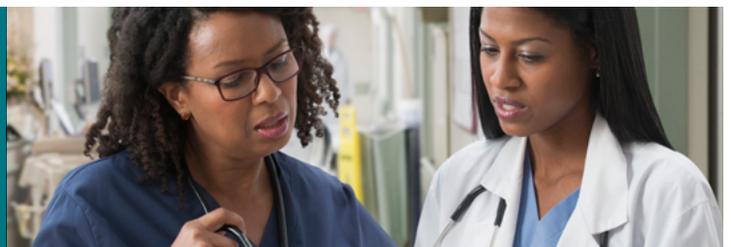
Powering Health is one example of a customized HOMER SaaS API, which enables the creation of a modeling tool with a specific focus.

See Powering Health at:
PoweringHealth.HomerEnergy.com



HOMER SaaS API enables rural health clinics to develop right-sized electrical power that can enable better care for patients.

Powering Health enables non-engineers to design hybrid renewable energy systems to meet the needs of specific medical equipment.



CASE STUDY

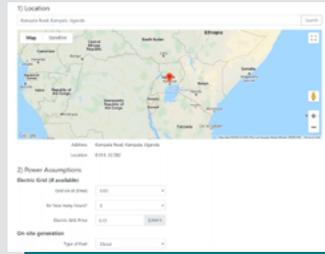
Sample screenshots (right) are an example of Powering Health's analysis of power needs based on specific inputs. HOMER SaaS API enables customized web applications to:

- Seamlessly integrate HOMER into your software platform
- Streamline internal processes
- Generate leads and qualify customers

HOMER Energy by UL collaborated with World Bank's Energy Sector Management Assistance Program (ESMAP), and We Care Solar, as well as numerous experts to update Powering Health on a fast track and meet the urgent need for preparedness. Powering Health was initially created in 2011 with funding provided by U.S. Agency for International Development (USAID).

Software specifics

Powering Health is one example of a customized web application using HOMER Software. It models stand-alone or grid-connected hybrid renewable energy systems that integrate batteries, diesel generators and solar panels.



In Powering Health, location look-up loads the location and solar data.

Component	Quantity	Replacement Cost	Fuel Cost	Diesel Generator Efficiency	Solar Panel Efficiency	Battery Efficiency	Total Annual Cost
Residential	100	10000	0.1	0.3	0.2	0.5	10000
Commercial	50	5000	0.1	0.3	0.2	0.5	5000
Industrial	20	2000	0.1	0.3	0.2	0.5	2000
Agriculture	10	1000	0.1	0.3	0.2	0.5	1000
Healthcare	5	500	0.1	0.3	0.2	0.5	500
Education	5	500	0.1	0.3	0.2	0.5	500
Government	5	500	0.1	0.3	0.2	0.5	500
Military	5	500	0.1	0.3	0.2	0.5	500
Retail	5	500	0.1	0.3	0.2	0.5	500
Manufacturing	5	500	0.1	0.3	0.2	0.5	500
Transportation	5	500	0.1	0.3	0.2	0.5	500
Data Center	5	500	0.1	0.3	0.2	0.5	500
Telecom	5	500	0.1	0.3	0.2	0.5	500
Mining	5	500	0.1	0.3	0.2	0.5	500
Pulp and Paper	5	500	0.1	0.3	0.2	0.5	500
Food Processing	5	500	0.1	0.3	0.2	0.5	500
Textiles	5	500	0.1	0.3	0.2	0.5	500
Chemicals	5	500	0.1	0.3	0.2	0.5	500
Pharmaceuticals	5	500	0.1	0.3	0.2	0.5	500
Metals	5	500	0.1	0.3	0.2	0.5	500
Glass	5	500	0.1	0.3	0.2	0.5	500
Rubber	5	500	0.1	0.3	0.2	0.5	500
Plastics	5	500	0.1	0.3	0.2	0.5	500
Fertilizers	5	500	0.1	0.3	0.2	0.5	500
Pesticides	5	500	0.1	0.3	0.2	0.5	500
Herbicides	5	500	0.1	0.3	0.2	0.5	500
Fungicides	5	500	0.1	0.3	0.2	0.5	500
Insecticides	5	500	0.1	0.3	0.2	0.5	500
Antibiotics	5	500	0.1	0.3	0.2	0.5	500
Vaccines	5	500	0.1	0.3	0.2	0.5	500
Drugs	5	500	0.1	0.3	0.2	0.5	500
Medical Equipment	5	500	0.1	0.3	0.2	0.5	500
Diagnostic Equipment	5	500	0.1	0.3	0.2	0.5	500
Immunization Equipment	5	500	0.1	0.3	0.2	0.5	500
Laboratory Equipment	5	500	0.1	0.3	0.2	0.5	500
Pharmacy Equipment	5	500	0.1	0.3	0.2	0.5	500
Hospital Equipment	5	500	0.1	0.3	0.2	0.5	500
Clinic Equipment	5	500	0.1	0.3	0.2	0.5	500
Dental Equipment	5	500	0.1	0.3	0.2	0.5	500
Veterinary Equipment	5	500	0.1	0.3	0.2	0.5	500

Inputs, such as electric load, can be specified.



Outputs, such as photovoltaic (PV), are displayed as graphs and tables.

Component	Capital	Replacement	O&M	Fuel	Storage	Total
System Architecture	10000	0	0	0	0	10000
Cost Summary	10000	0	0	0	0	10000
Net Present Costs	10000	0	0	0	0	10000

Cost summaries and table of contents provide critical, easy-to-find information.

Why HOMER SaaS API?

HOMER SaaS API enables you to create customized web, mobile or desktop applications built on the power of HOMER Pro or HOMER Grid — a leading platform for optimizing distributed energy resources (DERs) and microgrids across all sectors. Companies and organizations of all sizes use HOMER SaaS API to deploy custom applications. .

For more information, visit homerenergy.com.



Empowering Trust[®]

UL and the UL logo are trademarks of UL LLC © 2021.

0221