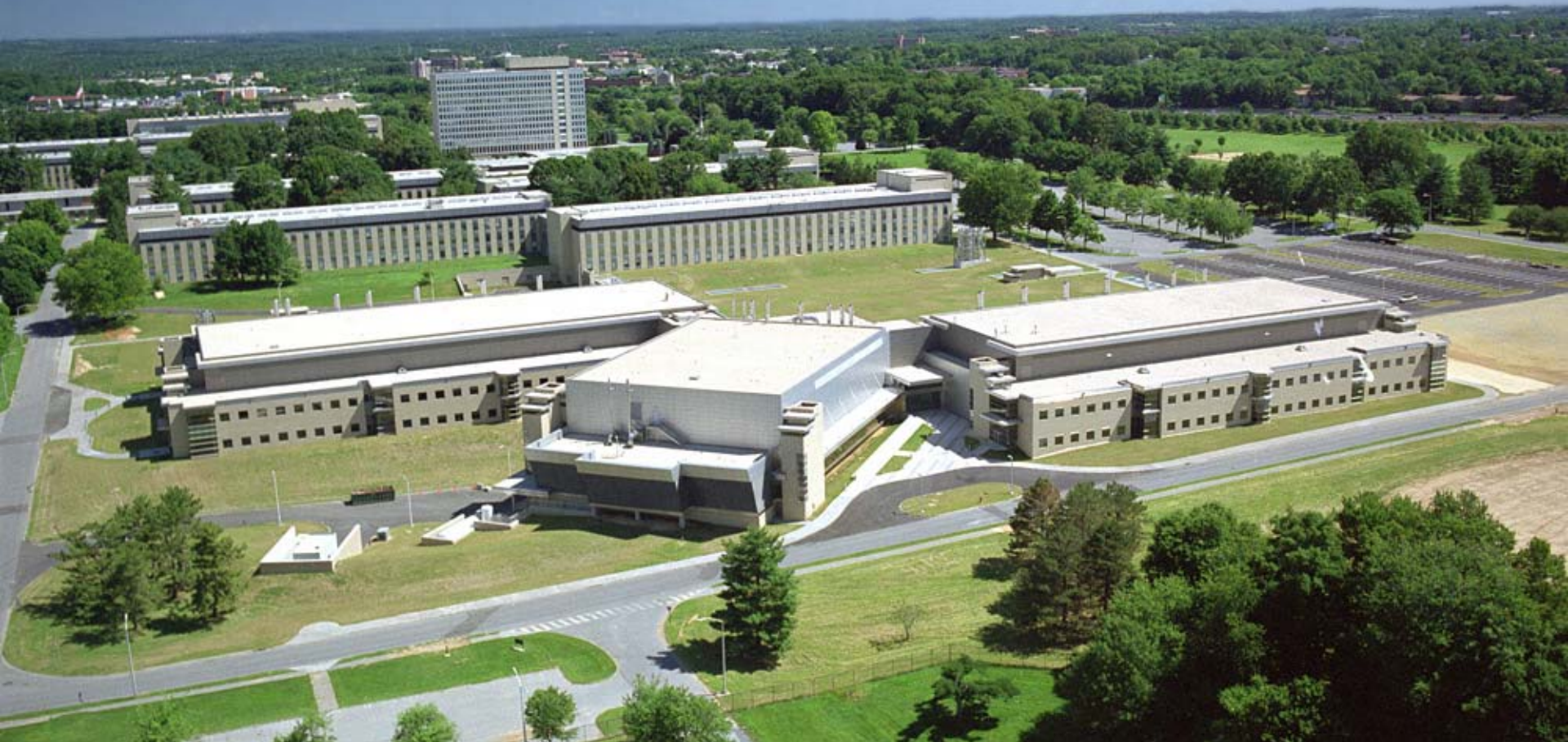
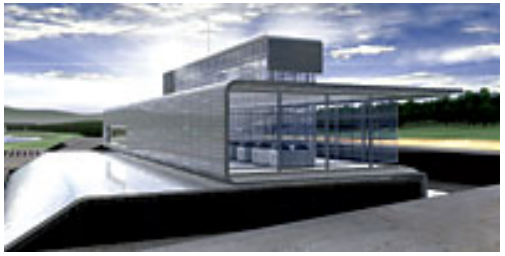
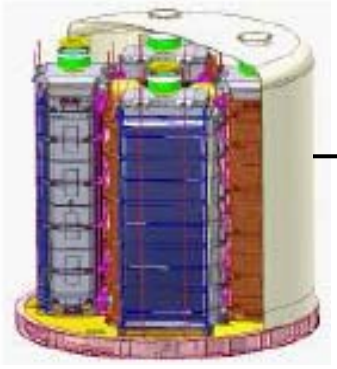
Welcome to

High-Megawatt Power Converter Technology R&D Roadmap Workshop



SECA Fuel Cell Plant





Fuel Cell Stack

→

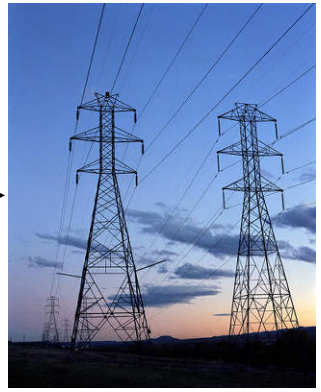
Power Conditioning System (PCS)

$40-$100 / kW

→

60 Hz Step-up Transformer

→



Power Grid

$40-$100 / kW for PCS is a difficult stretch goal !

http://www.netl.doe.gov/publications/proceedings/07/SECA_Workshop/index.html

Previous Meeting :
High Megawatt Converter Workshop
January 24, 2007 at NIST

- **Industry Roadmap: Today**
  - **Initiate roadmap process to offer guidance for further development of high-megawatt converters technology**
- **Inter-Agency Advanced Power Group (IAPG)**
  - **Form interagency task group to coordinate Federal programs in high-megawatt converter technologies - under IAPG ESWG**
  - **Meeting at NIST - April 24-25, 2008**
- **National Science Foundation (NSF)**
  - **Establish power electronics curriculums and fundamental research programs for alternate energy power converters**
  - **Meeting at NIST - May 15-16, 2008**

High Megawatt Converter Workshop: http://www.high-megawatt.nist.gov/workshop-1-24-07/

High-Megawatt Power Converter Technology R&D Roadmap Workshop

AGENDA

8-8:30am Registration and Breakfast

8:30-8:35 1.0) Welcome and Logistics: (Al Hefner and Ron Wolk)

8:35-10am 1) Opening Presentations (Session Chair: Leo Casey)

1.1) Keynote and Workshop Goals -- Roadmap Vision; State-of-the-art grid connected inverter specifications and goals for future value added high-megawatt grid connected inverters
(Leo Casey)

1.2) Power, Energy, and Grid of the Future
(Charlie Vartanian)

1.3) Issues and Advantages for High Megawatt (HMW) Inverters in Transforming the Power grid
(Alex Stankovic)

AGENDA (Late Morning)

10:15-11:10 **2) Grid-connection of Alternate/Clean Energy sources**
(Session Chair: Ron Wolk)

2.1) Power Conditioning System (PCS) needs of Photovoltaic and Renewable Energy (Bob Reedy)

2.2) PCS Requirements for Wind (Sumit Bose)

2.3) PCS Requirements for Fuel Cells (Tom Gordon)

11:10-noon **3) Grid Controllers and Advanced Power Grid**
(Session Chair: Frank Holcomb)

3.1) PCS requirements for Army Micro Grid Programs (Frank Holcomb)

3.2) PCS requirements for Power Island (Michel Ropp)

3.3) PCS requirements for HVDC and FACTS (Lee Tang)

AGENDA (Early Afternoon)

1-2:10pm

4) Advanced Component Technologies for HMW Inverters
(Session Chair: Al Hefner)

4.1) High-Voltage, High-Frequency Devices for Solid State Power Substation and Grid Connected Inverters
(Al Hefner)

4.2) SiC Power Device and Material Technology
(Dave Grider)

4.3) Advanced Power Module/Package Technology
(Scott Leslie)

4,4) Advanced Passive Component Technologies for High Frequency High Power Converters
(Bill Reass)

AGENDA (Late Afternoon)

2:10-3:40pm **5) Open Discussion:**
(Moderator: Leo Casey)

Technical:
- **role of inverters in grid of the future**
- **PCS for alternate/clean energy generation**
- **key developments/requirements**
- **technology gaps, components, systems,…**
- **roadmap, technology, standards**

Organization:
- **strawman plan,**
- **next meeting,**
- **potential role within IEEE**

3:40-4:00 **Break**

4:00-5pm **6) Wrap-up Presentation and call for Consensus**
(Facilitator: Ron Wolk)

5pm **Adjourn**