SUCCESS FACTORS for DEVELOPING Solar Training Centers

Lessons learned
Best practices

Johnny Weiss – Solar Consulting LLC
www.johnnyweiss-solar.com
The climate emergency has created an urgent challenge. We **must now dramatically scale** our workforce development efforts.

SCALE!!!

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Six Factors for Developing Quality Solar (PV) Training Centers

1 - QUALITY FACILITY (practical - Hands-on)

2 - ACCREDITATION and CERTIFICATION

3 - STRATEGIC PARTNERSHIPS

4 - WOMEN and DIVERSITY INVOLVEMENT

5 - APPROPRIATE CURRICULUM

6 - DEDICATED FULL-TIME STAFF
Solar Energy International - SEI's mission is to provide industry-leading technical training and expertise in renewable energy to empower people, communities, and businesses worldwide.

Why? Because we envision a world powered by renewable energy!
# 1 SUCCESS FACTOR - A QUALITY FACILITY

REQUIREMENTS:

- Permanent
- Affordable
- Accessible
- Housing for students and instructors (?)
OUTDOOR LAB YARD
Simulates practical real world conditions
Hands-on!

Necessary for vocational technical training
Outdoor training is challenging.
Safety FIRST!

Johnny Weiss – Solar Consulting LLC
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High quality audio/visual capability with reliable internet
# 2 SUCCESS FACTOR
ACCREDITATION AND CERTIFICATION

For Big Picture Success

Training deserves significant Industry Support!
Training provides a *Record of Completion*
Oversight Agency - **IREC**

**Interstate Renewable Energy Council**

Credibility and accountability*
Solar Professionals Certificate Program

- Residential and Commercial Photovoltaic Systems Certificate
- Battery-Based Photovoltaic Systems Certificate
- Solar Professionals Trainer Certificate
- Solar Business and Technical Sales Certificate
- International and Developing World Applications Certificate
- Renewable Energy Applications Certificate

The Solar Professionals Certificate Program – to prepare for a career in the solar industry.
INDEPENDENT CERTIFICATION

North American Board of Certified Energy Practitioners

Value of third party certification*
# 3 SUCCESS FACTOR
STRATEGIC PARTNERSHIPS

- Original Equipment Manufacturers (OEMs)
- Regional Hardware Distributors
- Local Installers/Dealers
- Non-Governmental Organizations (NGOs)
- Government Agency Support
INTERNATIONAL SOLAR INDUSTRY RELATIONSHIPS

SMA
SolarWorld
Fronius
TrinaSolar
MORNINGSTAR
CanadianSolar
Victron Energy
Steca
Trojan Battery Company

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# 4 SUCCESS FACTOR

COMMITMENT to WOMEN’S INVOLVEMENT + DIVERSITY
It's time for Affirmative Action!

Additional hands-on practice opportunities
# 5 SUCCESS FACTOR
APPROPRIATE CURRICULUM

Considerations: Cultural - Technical Level - Duration

LAKOTA RESERVATION – PINE RIDGE, SD USA

HENRY RED CLOUD – SOLAR WARRIOR
Red Cloud RE Center (RCREC) Lakota Res Pine Ridge, S.D.

www.redcloudrenewable.org
www.RUCOSUO.or.tz
Rural Community Support Org

Maasailand Tanzania

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End User Training Example:

Teaching battery state-of-charge using a balloon
SEI’s Programa Hispano Costa Rica Campus
Grid-tied System With Batteries

- PV Array 12VDC
- Inverter 12VDC-120VAC
- Storage Battery 12VDC
- Backed-up AC Load Center
- Branch Circuits to Backed-up AC Loads
- AC Service Panel
- Power Lines

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ONLINE TRAINING and ‘ALTERNATE DELIVERY’ IS THE FUTURE AND NOW!

Mobile devices are transforming educational delivery!

Lukas Karlongi
Maasai Community Leader

Johnny Weiss – Solar Consulting LLC
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# 6 SUCCESS FACTOR
DEDICATED FULL-TIME STAFF

OUR MISSION
To provide industry-leading technical training and expertise in renewable energy to communities, businesses, and industries worldwide.

MEET THE S3 TEAM

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Major shifts expected in the global solar market in 2017:

1. **China**: Similar 30+ GW expectations in 2017 demonstrate the industry’s dependence on China’s opaque policy-driven demand.

2. **U.S.**: Despite 97% growth in 2016, demand will contract by over 10% before the non-ITC-rush utility-scale pipeline is replenished.

3. **India**: A nearly 30 GW tender pipeline and rapidly declining costs will spur a doubling of 2016 demand this year.

4. **Japan**: Policy transition toward auctions resulting in 25-30 GW of approved projects being executed, though 8 GW still likely in 2017.

**Cumulative Forecast**

- **2017-2022 = 572.9 GW**
- **2017-2022 CAGR = 5.2%**

Source: Greentech Media Global Solar Demand Monitor Q1 2017 GTM
Strategic plan to SCALE the Global Work Force

– Improve current system process/efficiency
– Grow instructor base by training trainers
– Embrace new educational delivery technology
– Strengthen partner relationships

The way forward includes developing quality Solar Training Centers.
TIME TO DRAMATICALLY SCALE UP THE SOLAR WORKFORCE!

Let’s work together  www.solarenergy.org