American Association of Community Colleges

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Customer rationale

Adjacent Physical Offering: One Step Closer to the Vision

Renewable Energy & Power Solns

On-Site Generation
Focus: Client’s Physical Power Risk
Rationale:
• Maintain Essential Systems - Limit Utility Exposure
• Long-term Fuel Hedge - Solar only
• Regulation readiness - Manage GHG footprint

PACT
Focus: Customer Building Envelope
Rationale: Reduce Expense through reduced Consumption

Energy Consultancy

Future State
Focus: Energy Risk Management
Rationale:
• Comprehensive Energy Optimization
  • Integrate:
    – Physical Solutions
    – Commodity Volatility
    – Financial Risk

HVAC Sales and Service
Focus: Equipment
Rationale: Equipment Reliability and Maintenance Expense

Core Service & Sales

Manage Operational Costs
• Electricity
• Natural Gas

Maintain Infrastructure
• Power Quality
• Emergency Capacity

Maximize Efficiency
• Reduce Consumption
• Pollution Compliance

Enhance Organization Value
• Create New Revenues
• Reduce Investment Capital

Creating New Ways to Participate Within Our Clients Portfolios

+ TEP: Direct Project Investment
Platform to Partner w/ Customer
Quick Market Facts

The Renewable & Distributed Energy Market is Very Large & Growing

Solar Power
- 67 percent US growth in 2010 equaling ~ $6.0B of total annual investment.
- 2010 distributed solar: 636MW worth ~ $4.0B of annual investment....peak powering more than 500,000 homes.

Information from SEIA

Cogeneration (CHP)
- Total market estimated to range between $100 billion and @200 billion.
- 5,000MW installed, power 3.5 million homes across the USA since 2000.
- 35 - 77,000 MW’s potential market, can power 25+ million homes.

Information from Cogeneration & On-site Power Production Magazine

Waste-to-Power
Waste-water / Landfill Gas
- Waste-water : $1-1.5B (340 MW) market potential; can power 250,000+ homes in small and medium cities across the USA.
- Landfill: estimated $2.5-3.0B market; EPA identified 500 sites across the USA can power more than 500,000 homes.

Information from 2007 EPA CHP Study for WWTF

* EIA: in 2009 there were approximately 125 million residential homes in the US consuming 908kWh of electricity on average each month.
What TREPS Offers
Success requires experienced leaders working as a team levering complimentary and overlapping skills sets at a higher level in critical areas.

**Power and Commercial Customer Sales**
- Extensive customer, project and market qualifying capabilities.
- A C-Suite sale that has to intimately integrate with customer’s overall energy strategy and contracts.
- Position investment return drivers and integration of capitalization structures.
- Must position against power alternatives, energy pricing, operational risks and utility infrastructure.

**Power Generation Development**
- Skills to design, engineer, procure and construct generating facilities.
- Ability to properly qualify subcontractors, experts and counsel.
- Need to self-integrate for solar projects (D-EPC).
- Ability to negotiate D-EPC, PPA, contracts.
- Ensure back-to-back/flow through/arbitrage terms, LDs, etc.

**Financial Acumen**
- Monetize federal and state benefits: 20-70% of capital cost.
- Negotiate PPA’s, financing documents and capital facilities.
- Analyze all risks, project economics, business economics and funding alternatives.
- Source and facilitate debt and equity investments from qualified investors.

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Financial / Technical / Consulting Expertise Beyond Traditional Business
What Does the Industry Need?

Challenges and needs for Distributed Gen to be successful

- Better understanding of T&D system/integration with DG
- Sophisticated remote monitoring and operation of assets
- Better understanding of securing stable fuel supplies
- Commercialization of energy storage technologies

“Course Grabbers” – Initial courses for building an Energy Curriculum

- History and future of America’s Utility Grid system
- Emerging technologies – application & commercialization
- Financial & technical modeling – understanding all the costs & operating risks
- Understanding the fuel markets – risks and opportunities
Comprehensive Development

Involves engagement in every aspect of the project as illustrated.

Includes feasibility and design-stage participation.
Types of Disciplines are needed for Energy

Engineering

- Project Development – mechanical, electrical, civil
- Project Management – construction, industrial
- Design Engineering – mechanical, electrical, process, civil
- Startup & Operations – field engineering, technicians, operators, maintenance

Business

- Commercial – sales, business development, asset management
- Finance – accounting, capital sourcing, investment banking
- Legal – contracts, regulatory, litigation
- Admin and IT – documentation, remote monitoring, reporting, diagnostics
Commercial Energy Chain

Ingersoll Rand / Trane Expanding Comprehensive Energy Risk Management Capabilities
A vision…

http://www.youtube.com/watch?v=mQ24JRI6hHE&feature=youtu.be