Can Energy Efficiency Save and Pay? Energy Efficiency Certificates

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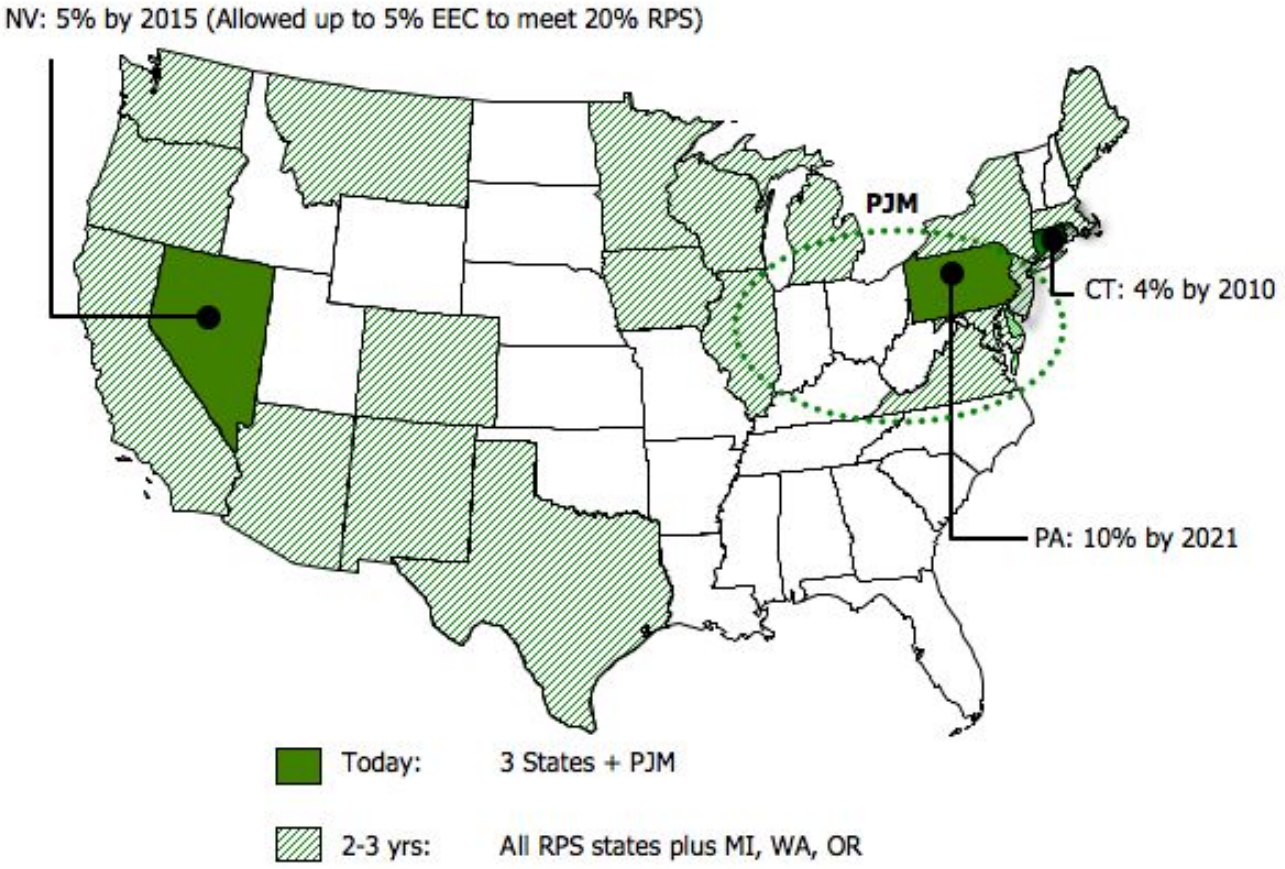
ENERGY EFFICIENCY CERTIFICATE (EECs) PROGRAM

- **ENERGY EFFICIENCY KEY OPTION TO MEET FUTURE ENERGY NEEDS**
  - Low Cost Compared to Construction of Generating Capacity
    - $.029/kilowatt-hour (kwh) vs. $.058/kwh for coal fired or nuclear capacity
    - "The most efficient kwh is the one that is not generated"
  - Energy Efficiency Being Mandated as an Energy Source By Regulating Bodies
    - Demand Side Management Programs: Reducing Demand through Energy Efficiency
    - Renewable Portfolio Standards
      - State or Country Requirements for Deployment of non-CO2 Emitting Generating Capacity
      - Energy Efficiency Can Be Included as a Source of Renewable Energy
  - Used by Companies to Offset the Indirect CO2 Emissions Associated with Their Electrical Energy Usage

- **EECs (White Tags®) are an Emerging "Vehicle" for the Documentation and Transfer of Energy Savings and CO2 Avoidance**
  - Regulatory Programs Have Specified Requirements for EECs
  - Two Standards to Be Released in 4Q07 to Cover Regulated and Voluntary Markets:
    - ERT and Unnamed Standard Group
    - Requires a "Monitoring and Verification" Plan: Proof that the Savings are Achieved

Portfolio Standards for Conservation



Mandated Market

EEC OFFERING BY IBM & NEUWING ENERGY

- **Energy Efficiency Certificates (EECs) Document Energy Efficiency Savings**
  - An EEC is Prepared to Prescribed Regulatory Requirements or Documented Standards
  - Utilities (in Regulated Jurisdictions) and Companies (Voluntary Programs) will Pay to Obtain the EECs
    - $10-15/MWH in the Regulated Jurisdictions
    - $3-5/MWH in the Voluntary Market
- **Server and Storage Consolidation Projects Can Be Documented by EECs**
  - Client Benefits
    - Verified Energy Savings
    - Public Relations Benefit
    - Support of Utility Energy Efficiency and Demand Management Programs
    - Monetary Value: Client Must Give Up “Title” to Energy Efficiency & CO2 Avoidance

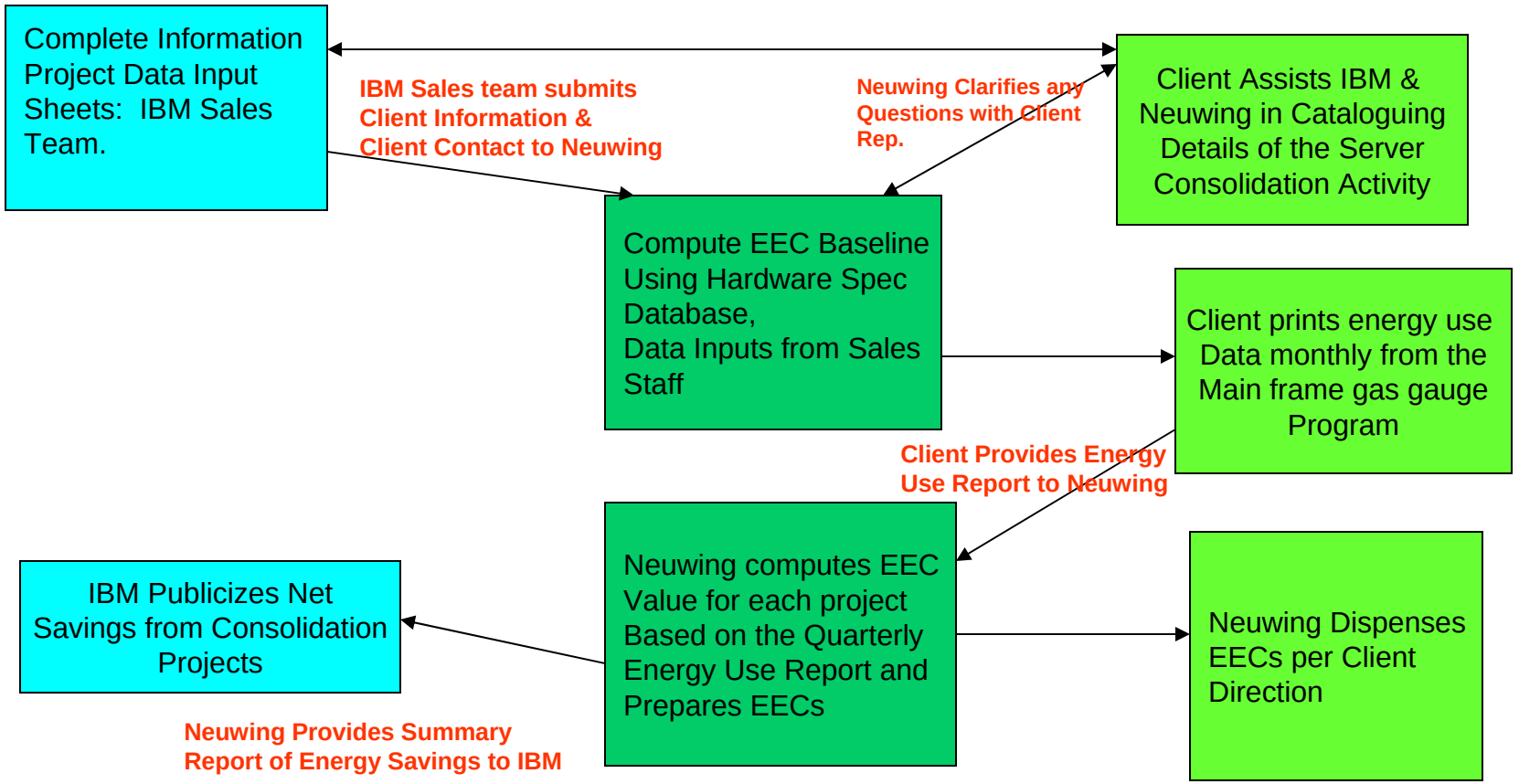
IBM Energy Efficiency Certificate Process

Example: Server Consolidation Projects

IBM Responsibilities

Neuwing Responsibilities

Client Support



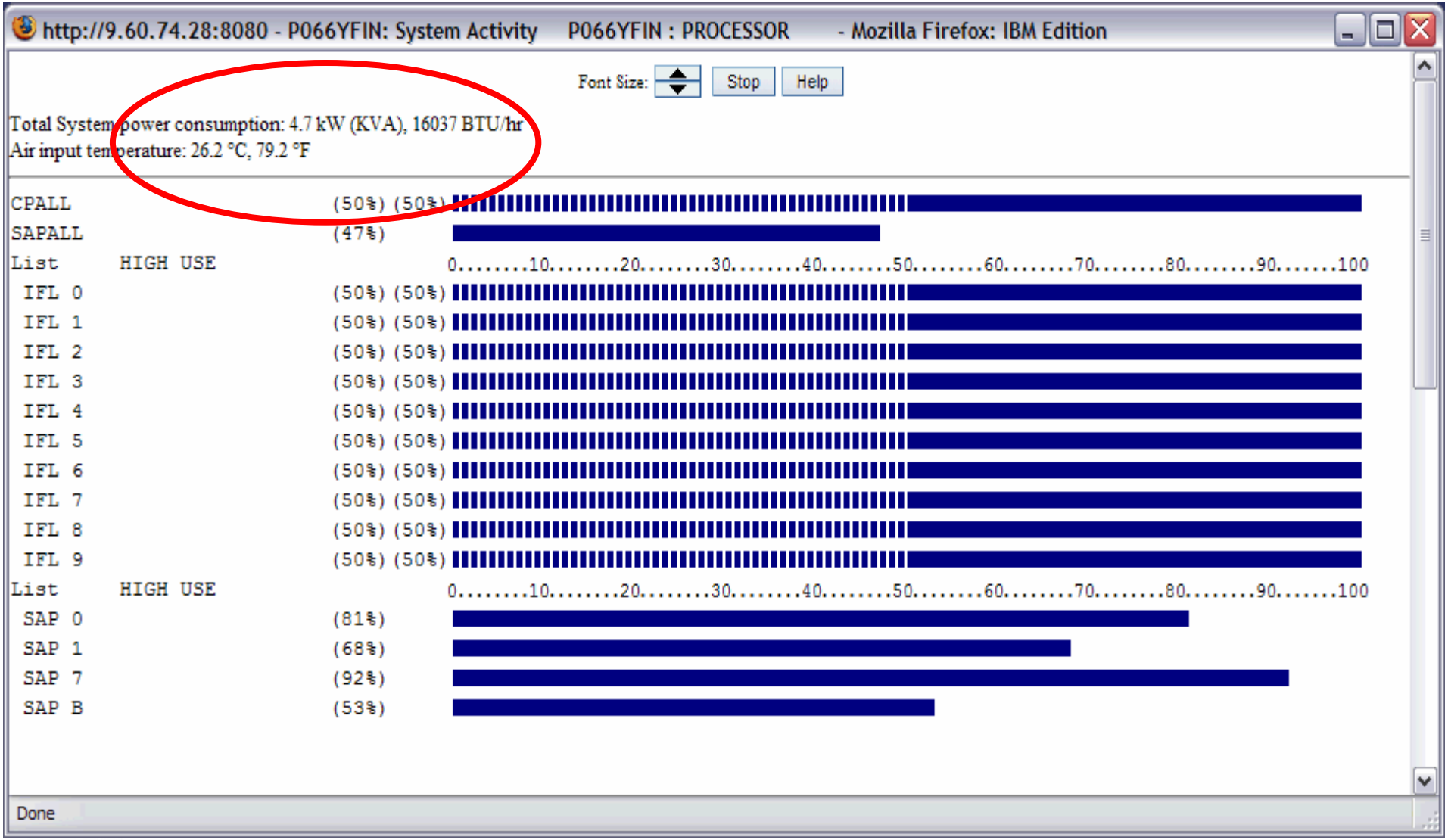
PROCESS IMPLEMENTATION

- **Calculate Energy Use of Current Distributed System**
  - Inventory Servers to Be Consolidated: Client & IBM Sales Team
  - Power Use and Thermal Output from Commercially Available Database
  - Set Factors for Energy Cooling Use (Part of Process Development)

- **Report Usage from IBM Database:**
  - Client to Document Power Use with On Board Power Measurement Tools
    - System z “gas gauge”
    - Active Energy Manager
    - Data Submitted Directly to Neuwing
  - Neuwing Calculates Savings & Delivers Certificates to Customers
  - Neuwing Retains 25% of Certificates or Charges $2.5/MWH of savings for Their Fee to Prepare the EECs and Perform the M&V Plan

- **Neuwing Manages Ongoing “Monitoring and Verification” Program**

Example: System Activity Display
z9 EC, model S18, all IFL machine running 100%



Energy Consumption on System z9
August + September 2007
Energy Envelope
- Max and Typical KW

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Typical Energy Consumption System z9 EC (KW)

System z9 EC	S08	S18	S28	S38
Max	9	12	12	14
Typical 90%	6	9	12	13
Typical 50%	4	7	10	12

Based on field data August and Sept. 2007
No system at max label rating of 18.3 KW
+90% of measured systems within average of hourly averages
+50% of measured systems within average of hourly averages

Typical Energy Consumption System z9 EC S54 (KW)

System z9 EC	S54
Max	15
Typical 90%	13
Typical 50%	11

Based on Field Data August and Sept. 2007

No system at label power 18.3 KW

Typical Energy Consumption z9 BC (KW)

System z9 BC	R07	S07
Max	3.5	3.5
Typical 90%	3.0	3.5
Typical 50%	2.5	2.5

Based on field Data August and Sept. 2007

No System at label power 5.3 KW