Cagayan Valley Regional Prospects and Energy Development

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NEDA-RO2
Economic Significance of the Cagayan Valley Region

- Major supplier of agricultural products and food basket of the country
- The next trade and industrial hub in South East Asia
- Watershed Haven
- Source of hydropower and other alternative energy sources
Existing Renewable Energy Facilities

- Magat Dam – 360MW
  Ramon, Isabela
- Magat Dam MiniHydro A – 1.44MW
  Ramon, Isabela
- Magat Dam MiniHydro B – 1.08MW
  Ramon, Isabela
- NIA Baligatan – 16.21MW
  Ramon, Isabela
- Tumauini Minihydro – 0.25MW
  Tumauini, Isabela
- Commercial Wind Diesel Hybrid Project in Batanes – 180 KW
HYDRO POWER POTENTIALS

Chico IV Dam – 360MW

Ibulao Dam – 17MW
N. Vizcaya?

Alimit No. 1 Dam
12.2MW, N. Viz.

Matuno Dam - 180MW
Bambang, N.Vizcaya

Siffu No. 1 Dam – 5.4MW
Roxas, Isabela

Tumauini Dam – 7MW
Isabela

Tanuddan Dam – 25MW
Isabela

Casecnan Dam - 268MW
Quirino

Diduyon Dam – 352MW
Quirino

Total: 1,227 MW
Jatropha and Other Oil-bearing plants in vast marginal areas

**CBFM AREAS**

- Batanes - 920.86 has.
- Cagayan - 96,012.70 has.
- Isabela - 52,689.18 has.
- N. Vizcaya - 21,918.42 has.
- Quirino - 86,756.08 has.
- **Total** - 258,297.24 has.
OTHER ENERGY POTENTIALS

Windmill:
- Batanes and
- Coastal Muns.

Baua Geothermal Plant

Natural Gas:
- Isabela (exploration)

Solar:
- In Off-Grid Brgys

Biomass:
- CDM (Isabela)

Coal:
- Iguig, Cagayan
- Cauayan City
## Status of Energization (as of June 2008)

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Region 02</th>
<th>National</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brgy Energization</td>
<td>79%</td>
<td>97%</td>
<td>96 barangays unenergized</td>
</tr>
<tr>
<td>Sitio Energization</td>
<td>46%</td>
<td>69%</td>
<td>2&lt;sup&gt;nd&lt;/sup&gt; lowest coverage nationwide; 855 sitios unenergized</td>
</tr>
<tr>
<td>Household Coverage</td>
<td>79%</td>
<td>69%</td>
<td>137,000 HHs without electricity</td>
</tr>
</tbody>
</table>

*Most unenergized barangays/sitios are off-grid areas*
Systems Losses by Electric Coops

Fig. __ System Loss of Electric Cooperatives, CY 2007
Region 02 Household Energy Consumption
2004 Data

Source: NSO
LPG users doubled in number from 1995 to 2004.

An increment of 19.1 percentage points

Source: NSO
A shift in the preference from renewable energy sources to conventional fuel.

**Graph:**
- **Fuelwood**
  - 2004: 55.1%
  - 1995: 63.5%
- **Charcoal**
  - 2004: 38.5%
  - 1995: 34.2%
- **Biomass**
  - 2004: 18.7%
  - 1995: 29.2%

**Source:** NSO
Households used renewable energy sources for...

<table>
<thead>
<tr>
<th>End-use</th>
<th>Fuelwood</th>
<th>Charcoal</th>
<th>Biomass Residue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Households</td>
<td>9.4M</td>
<td>5.8M</td>
<td>3.2M</td>
</tr>
<tr>
<td>Cooking</td>
<td>99.6%</td>
<td>88.1%</td>
<td>85.9%</td>
</tr>
<tr>
<td>Heating water for bathing</td>
<td>10.5%</td>
<td>6.7%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Ironing</td>
<td>-</td>
<td>18.6%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Space warming</td>
<td>0.3%</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>0.9%</td>
<td>2.5%</td>
<td>13.6%</td>
</tr>
</tbody>
</table>
Households usually obtained fuel from...

**Electricity**

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Utilities</td>
<td>32.7%</td>
</tr>
<tr>
<td>Electric cooperatives</td>
<td>41.4%</td>
</tr>
<tr>
<td>Industry/business</td>
<td>0.3%</td>
</tr>
<tr>
<td>Neighboring households</td>
<td>15.3%</td>
</tr>
</tbody>
</table>

**Dry cell battery**

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dry cell battery</td>
<td>61.7%</td>
</tr>
<tr>
<td>Generator</td>
<td>0.4%</td>
</tr>
</tbody>
</table>
Households usually obtained fuel from...

**LPG**

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picked-up from store/ dealer</td>
<td>80.3%</td>
</tr>
<tr>
<td>Delivered</td>
<td>19.7%</td>
</tr>
</tbody>
</table>

**Kerosene**

<table>
<thead>
<tr>
<th>Method</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kerosene agent/ dealer (pick-up)</td>
<td>17.6%</td>
</tr>
<tr>
<td>Kerosene agent/ dealer (delivery)</td>
<td>0.9%</td>
</tr>
<tr>
<td>Sari-sari store</td>
<td>79.9%</td>
</tr>
<tr>
<td>Kerosene peddler</td>
<td>0.6%</td>
</tr>
<tr>
<td>Others</td>
<td>1.0%</td>
</tr>
</tbody>
</table>
Updated RDP Strategies and Targets

- Accelerating the pace of rural electrification to attain 100% barangay energization by 2010
  - Installation of appropriate NRE for barangays in off-grid areas (15 off-grid barangays)
  - Connection of unenergized barangays to existing power grids

- Promote energy independence through the Development of renewable and indigenous energy
  - Intensification of NRE research activities and project proposal preparation

- Strengthening Energy Efficiency
  - Single Digit Average System Loss
Region 2 Initiatives

- Adoption of the Jatropha Industry Framework Plan
  - Guide the establishment of a jatropha industry in the region
  - Expression of interest from several investors on Jathropa development

- Promotion of Sorghum and other sources of Ethanol
  - Establishment of Agri-Industrial Ecozone in Lallo, Cagayan for E-Cane Bio-Fuel Project through the The Pampanga Industrial Park Corporation
  - ISU project on pilot production of ethanol and other intermediary products from sorghum funded through NEDA KR2 Program
Region 2 Initiatives

- Preparation of Feasibility Studies for new and renewable energy (NRE) of the Project Development Assistance Committee
  - Solar Charging Station Project for 4 municipalities of Palanan, Kasibu, Maconacon and San Antonio, Baggao (13 barangays)
  - Micro-hydro project for Mun. of Maconacon
Region 2 Initiatives

- Conduct of a Study on the power rates in the Region
  - Region 02 ranks 3rd among regions in electricity cost
  - The average cost of electricity in the region at Php8.66 per KWh is much higher than the national average of Php6.68 per KWh. Region 12 recorded the cheapest electricity at Php4.67 per KWh.
  - Quirino Province registered a cost of Php10.16 per KWH, 2nd highest among provinces in the country next to Ifugao.
  - Except for the province of Batanes (Php6.31/KWh), all provinces registered higher rates than the national average of Php6.68/KWh.
Region 2 Initiatives

- **Promotion of Corn charcoal briquette technology**
  - DENR Training for charcoal makers in Diadi, Nueva Vizcaya
  - MOA between Department of Environment and Natural Resources (DENR) and Nehemiah Cooperative, Santiago City for the use of DENR equipment
  - Department of Labor and Employment (DOLE) assisting a farmers group in Amulung in charcoal briquetting from corn cobs, coconut husk, rice hull
Region 2 Initiatives

Promotion of Biogas

- Department of Science and Technology (DOST) assisting hog raisers in the generation of biogas

- One cooperative

- 2 individuals

- 5 LGUs: Sanchez Mira, Baggao, Claveria, Amulung, Jones
Priority Regional Programs and Projects Proposed for inclusion in the PEP
Priority Regional Programs and Projects for inclusion in the PEP

- **Renewable and Indigenous Energy Resource Development**
  - Coal Power Plants in Cagayan and Isabela
  - Northern Luzon Wind Power Project in the coastal towns of Cagayan and Batanes Province
  - Commercial Wind Diesel Hybrid Project in Batanes
  - Regionwide Micro-Hydro Plants for Upland Dwellers in potential areas of the region
  - Micro-Solar Home Projects in off-grid communities

- **Rural Electrification Program**

- **Energy Efficiency and Conservation Program**
  - Electric Cooperatives Systems Loss Reduction
  - Fuel Efficiency and Energy Conservation
Development of Hydro Power Projects

- **Alimit No. 1 Dam** – 12.2MW, N. Vizcaya
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Total: **1,227 MW**
Development of wind energy in the island and coastal municipalities

- Northern Luzon Wind Power Project in the coastal towns of Cagayan and Batanes Province
NRE Projects in Off-Grid Barangays and Sitios

- Micro-Hydro Plants for Upland Dwellers, Island Communities
- Solar Home Systems

Coal Power Plants in Cagayan and Isabela

Baua Geothermal Plant, Cagayan
Development of Jatropha potential areas in untenured public lands, vast grasslands and marginal areas in the region.
- Preservation of watershed areas in support to hydropower generating facilities
- Reforestation of other critical watersheds
Regional Issues and Concerns

1. Relatively high cost of electricity in the region (2nd highest among all regions in the country)
2. The regional average power generation cost is highest in the country.
3. High and increasing cost of electricity
4. High cost of gasoline
Regional Issues and Concerns

5. Inefficiency of electric cooperatives
   a. frequent unscheduled power interruptions
   b. high systems loss

6. The region has not significantly benefited from its being host to two (2) major low-cost sources of power

7. Need to facilitate the claim of local governments in N. Vizcaya for their share in the use of national wealth arising from the operation of the Casecnan Multi-Purpose Power and Irrigation
Regional Issues and Concerns

8. Need to accelerate rural energization to cover 96 barangays and reach 100% energization rate by 2010.
9. Unsure market for Jathropa
11. Unsustainable electricity services in remote barangays
Thank You!!!