Korea’s Response to Realizing Green Growth
-With a focus on Vocational Education and Training

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I. Vocational Education and Training in Korea

A. Vocational Training and Education

a) Formal Vocational Education System

<Figure> Formal Education System
I. Vocational Education and Training in Korea

b) Non-formal Vocational Training System

1) Non-formal vocational training
   • Public-Private vocational training institutes
   • In-house training centers

2) Ministry of Employment and Labor
   • Vocational; Training/skills development policies
   • Administers vocational training institutes
   • HRD Korea
   • Local Labor offices

c) Initial Training at Public Training Institutions

1) KOPO Craftsmen Training Program
   • One-year programs offered by the regional KOPO campuses.

2) KCCI Training Centers (KCCI Human Resources Development Institutes)
   • One and Two year programs to train skilled Manpower
II. Green Growth, Green Industry and Green Jobs in Korea

*Figure* Vision and Strategies of Korea Green Growth

**VISION**

To Be the World’s 7th Green Power by 2020
And the 5th Green Power by 2050

**Three Objectives, Ten Policy Directions**

**Mitigation of climate change and energy independence**
1. Effective mitigation of greenhouse gas emissions
2. Reduction of fossil fuel use and enhancement of energy independence
3. Strengthened capacity to adapt to climate change

**Creation of new engines for economic growth**
4. Development of green technologies
5. Greening of existing industries, promotion of green industry
6. Advancement of industrial structure
7. Development of structural foundation for green economy

**Improvement in quality of life and enhancement of international standing**
8. Greening the land and water, creation of green transport infrastructure
9. Bringing the green revolution into daily life
10. Becoming an international green growth role model
## II. Green Growth, Green Industry and Green Jobs in Korea

### <Figure> Promotion Goals and Strategies of Green New Deal Project

<table>
<thead>
<tr>
<th>Goal</th>
<th>Green Growth for Green Jobs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Corresponding short-term recession</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Main Field</th>
<th>Core Industry</th>
</tr>
</thead>
</table>
| Green SOC | - River Restoration  
- Green Transportation Construction  
- Green Country Information Infrastructure |
| Low Carbon | - Alternative Water Resource  
- Small and Middle Dam  
- Green Car  
- Clean Energy  
- Resource Recycling Expansion |
| Pro Environment | - Forest Biomass  
- Green Home  
- Green Building  
- Creating Green Living Space |

### Implementation Strategy

**Maximize job creation effect through selection and concentration**
- Focusing on high growth and job-impact core business
- Maximizing synergy with related projects

**Sharing role effectively among central ̶ local government, enterprises and private sectors**
- Government: Building infrastructure such as SOC investment, supporting new market creation and R&D investment
- Enterprise: Expansion on investment and employment through green industry development
- Private: Green innovation driven in living space such as consumption ̶ food, clothing and shelter ̶ education and culture
- Sharing role between central ̶ local government (Expanding participation of local company etc.)

**Speed up green daily life and project promotion**
- Improving business development awareness for saving energy
- Expanding green technology purchases and participation of private sector in managing public facilities
- Consideration financial supporting quickly such as alleviation of preliminary feasibility study
- Concentrating support expected projects to pro-environmental and tangible effect
### II. Green Growth, Green Industry and Green Jobs in Korea

#### <Table> Green Jobs Prospects by Industry

<table>
<thead>
<tr>
<th>Green Jobs</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2013</th>
<th>Increase/decrease</th>
<th>2009-2013</th>
<th>Annual average increase/decrease</th>
<th>Annual average increase rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, fishing, mining</td>
<td>10,578</td>
<td>12,690</td>
<td>9,865</td>
<td>10,415</td>
<td>-2,275</td>
<td>-455</td>
<td>-3.4</td>
<td></td>
</tr>
<tr>
<td>Manufacturing</td>
<td>114,157</td>
<td>117,293</td>
<td>121,150</td>
<td>145,835</td>
<td>28,542</td>
<td>5,708</td>
<td>4.5</td>
<td></td>
</tr>
<tr>
<td>Services</td>
<td>169,756</td>
<td>183,965</td>
<td>206,961</td>
<td>325,840</td>
<td>141,875</td>
<td>28,375</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>294,492</td>
<td>313,948</td>
<td>337,976</td>
<td>482,090</td>
<td>168,142</td>
<td>33,628</td>
<td>9.0</td>
<td></td>
</tr>
</tbody>
</table>

Source: Inter-ministerial Committee, Unpublished report.
II. Green Growth, Green Industry and Green Jobs in Korea

<table>
<thead>
<tr>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2013</th>
<th>Increase/ decrease</th>
<th>2009-2013 Annual average increase/ decrease</th>
<th>Annual average increase rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>53,992</td>
<td>56,265</td>
<td>57,570</td>
<td>75,662</td>
<td>19,398</td>
<td>3,880</td>
</tr>
<tr>
<td>Middle</td>
<td>35,569</td>
<td>38,037</td>
<td>43,242</td>
<td>64,037</td>
<td>26,000</td>
<td>5,200</td>
</tr>
<tr>
<td>Advanced</td>
<td>204,931</td>
<td>219,647</td>
<td>237,163</td>
<td>342,392</td>
<td>122,745</td>
<td>24,549</td>
</tr>
<tr>
<td>Total</td>
<td>294,492</td>
<td>313,949</td>
<td>337,975</td>
<td>482,091</td>
<td>168,143</td>
<td>33,629</td>
</tr>
</tbody>
</table>

Basic level: ISCED 3A, High school graduates, craftsmen.
Middle level: ISCED 5B, 2 or 3 year college graduates, technicians, industrial engineers.
Advanced level: ISCED 5A, 4 year university graduates, managers, researchers, engineers, professional engineers.
ISCED: International Standard Classification of Education
Source: Inter-ministerial Committee, Unpublished report.
A. Technologies, Technical Manpower Training to Promote the Green Industry as the New Growth Engine

B. Enhancement of Transferring to Green Manpower to Support Greenization of Existing Industries

C. Enhancing Green Manpower Supply Responding to the Demand of SMEs and Region

D. Establishment of National Technology Qualification System Leading Green Industry

E. Inviting Excellent Talents by Expanding Green Technology Investment
IV. Reorganization Status of Technology, Technical Manpower VET Development

*Figure* Curriculum Development Process (*Korea Polytechnics*)

- **Preparation**
  - Basic research
  - Field study & Job analysis
- **Curriculum development**
  - Grasp of the curriculum issue
  - Literature review (Profiling)
  - Industry trends workplace analysis
  - Selection of field study subject
  - Curriculum analysis
  - Drafting job description
  - Check for field
  - Drawing core operation
    - Feasibility testing
      - Core operation - curriculum mapping
      - Measurement of job-related degrees
      - Drawing curriculum
        - Feasibility testing
          - Curriculum finalized
  - N
  - Y
### IV. Reorganization Status of Technology, Technical Manpower VET Development

<Table> Reorganized Curriculums of Electric Measurement Department of Korea Polytechnics

<table>
<thead>
<tr>
<th>Classification</th>
<th>Subject</th>
<th>Before Reorganization</th>
<th>After Reorganization</th>
<th>Note (Maintenance, Abolition, New, Modified)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Completion of Hours</td>
<td>Completion of Hours</td>
<td></td>
</tr>
<tr>
<td>Liberal Arts</td>
<td>Computer</td>
<td>60</td>
<td>60</td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td>Health and Ability Development</td>
<td>40</td>
<td>40</td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td>Occupation and Society</td>
<td>40</td>
<td>40</td>
<td>Maintenance</td>
</tr>
<tr>
<td>Major Theory</td>
<td>Electric Theory</td>
<td>60</td>
<td>50</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Electric Appliance</td>
<td>40</td>
<td>20</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Automation Control</td>
<td>40</td>
<td>30</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Power Electricity</td>
<td>20</td>
<td>40</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Electric Facility</td>
<td>40</td>
<td>20</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Solar PV Generation</td>
<td>0</td>
<td>30</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td>Solar Cell Engineering</td>
<td>0</td>
<td>30</td>
<td>New</td>
</tr>
<tr>
<td>Major Practice</td>
<td>Sequence Control</td>
<td>220</td>
<td>160</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Power Electric Control</td>
<td>100</td>
<td>100</td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td>Electric CAD</td>
<td>120</td>
<td>60</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>PLC Control</td>
<td>140</td>
<td>120</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Digital Control</td>
<td>40</td>
<td>40</td>
<td>Maintenance</td>
</tr>
<tr>
<td></td>
<td>Control Appliance</td>
<td>140</td>
<td>80</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Electric Facility</td>
<td>140</td>
<td>100</td>
<td>Modified</td>
</tr>
<tr>
<td></td>
<td>Solar Cell Fabrication</td>
<td>0</td>
<td>120</td>
<td>New</td>
</tr>
<tr>
<td></td>
<td>Solar PV Generation</td>
<td>0</td>
<td>100</td>
<td>New</td>
</tr>
<tr>
<td>Project Practice</td>
<td>Project Practice</td>
<td>80</td>
<td>80</td>
<td>Maintenance</td>
</tr>
<tr>
<td>OJT</td>
<td>OJT</td>
<td>80</td>
<td>80</td>
<td>Maintenance</td>
</tr>
</tbody>
</table>
### Credits and Degrees by Major and Grade Level (Yeungnam University)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Freshman</th>
<th>Sophomore</th>
<th>Junior</th>
<th>Senior</th>
<th>Proof of degree</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrants for a single major</td>
<td>Liberal arts in affiliated major</td>
<td>Majors in affiliated major (&gt;63 credits)</td>
<td>Majors in fusion curriculum of green energy  (&gt;18 credits) + Majors in affiliated major (&gt;51)</td>
<td>Bachelor of engineering for affiliated major</td>
<td>affiliated major</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Majors in fusion curriculum of green energy  (&gt;35 credits) + Majors in affiliated major (&gt;42)</td>
<td></td>
<td>Bachelor of engineering for affiliated major + Certificate of course completion for Green Energy track</td>
<td>Bachelor of engineering for affiliated major + Certificate of course completion for Green Energy track</td>
<td>Green energy track*</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Bachelor of engineering for affiliated major + Bachelor of engineering for interdisciplinary study of green energy</td>
<td>Bachelor of engineering for affiliated major + Bachelor of engineering for interdisciplinary study of green energy</td>
<td>Interdisciplinary study of green energy*</td>
</tr>
<tr>
<td>Entrants for interdisciplinary study of green energy</td>
<td>Liberal arts in interdisciplinary study + Liberal arts in affiliated major</td>
<td>Majors in fusion curriculum of interdisciplinary study of green energy (&gt;35 credits) + Majors in affiliated major (&gt;42 credits)</td>
<td></td>
<td>Bachelor of engineering for interdisciplinary study of green energy + Bachelor of engineering for affiliated major</td>
<td>Bachelor of engineering for interdisciplinary study of green energy + Bachelor of engineering for affiliated major</td>
<td>Interdisciplinary study of green energy*</td>
</tr>
</tbody>
</table>

Note: *Freshman recruits separately: affiliated both affiliated major and interdisciplinary study of green energy → 2 majors.
* Sophomores and above undergoing an application process are selected: affiliated both affiliated major and interdisciplinary study of green energy → 2 majors.
* Sophomores and above who don’t want joint honors, but want to complete curriculums of green energy (the applicants).
Source: Yeungnam University Green Energy Leading Industry Personnel Training Center homepage (http://geerc.yu.ac.kr/geerc/index.htm.)
Thank You.

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