

ESETA SCARCE SKILLS

REPORT



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1. **PROCESS**

In support of the requests made by the Minister and the Department of Labour, the ESETA has embarked on a process to identify and address the scarce skills needs in its sector. The process has involved maximum consultation with and involvement by, stakeholders across the sector. These stakeholders have represented three broad groupings or sub-sectors within the energy sector namely:

- ❖ Nuclear and Renewable Energy
- ❖ The Generation, Transmission and Distribution of Electricity
- ❖ Electrical Contracting and the SMME segment

The process of stakeholder participation involved a series of workshops with the respective sub-sectors and the staff of the ESETA SSP department. The people attending these workshops were recognized within the sector as individuals, who had a clear understanding of the scarce skills requirements in their sub-sectors. At the workshops, the programme focused on three aspects:

- ❖ Identifying the Scarce Skill Areas
- ❖ Understanding the Constraints Applying to their Development
- ❖ Developing Actions and Strategies to Address their Retention and Development.

At the end of the workshop process, the information was collected and collated into a draft report and strategic plan. This draft strategy will be translated into a series of projects, resources will be allocated to these projects and a process of monitoring and evaluating progress against project targets will be set up.

2. **SECTORAL NEEDS**

Nuclear and Renewable Energy

The scarce skills identified for this sub-sector include the following:

- ❖ Mathematics and Applied Mathematics at school and tertiary level;
- ❖ Science including physics, chemistry, radiation science and technology, solid state physics and hydrology
- ❖ Environmental Management and Environmental Impact Analysis applied to the energy sector
- ❖ Engineering skills at the Engineer and Technician level including nuclear, mechanical, turbine, power conversion, electrical, metallurgical, welding, system, design (including CAD), instrumentation, quality/ quality control and testing/ non-destructive testing
- ❖ Computer Modeling and IT skills (e.g. computer coding)
- ❖ Supply Chain Management
- ❖ Research and Development Skills

In addition, this group also identified the need to engage other SETAs in developing peripheral skills impacting on the Energy sector e.g. construction of power stations.

2.2. THE GENERATION, TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

The scarce skills identified by this sub-sector included the following:

- ❖ Demand forecasting
- ❖ Energy Management/Energy Economics/Energy Pricing

- ❖ Energy Trading (contracting)
- ❖ Condition Monitoring
- ❖ Specialists at the Engineer and Technician levels including transformer specialists, protection specialists, turbine specialists, design specialists and systems planning specialists
- ❖ Engineering Economics
- ❖ Engineering Project Management
- ❖ Power System Planning and Controlling
- ❖ High Voltage, Direct Current specialists

2.3 ELECTRICAL CONTRACTING

The ECA has identified the following as scarce skills areas:

- ❖ Electrician
- ❖ Single Phase Tester
- ❖ ELCONOP 3
- ❖ Assessors and Moderators

The motivation for these scarce skills put forward by the ECA is worth recording and is presented below.

- ❖ Since implementation of SETA System the industry has experienced a 76% drop-off in apprenticeship registrations creating a large skilled artisan gap.
- ❖ Number of deaths in workforce due to HIV/Aids the ECA has shown through statistics from Members that skills are being lost due to HIV.AIDS related deaths. The influence of these deaths on the immediate family and the social benefits required to be paid out further places a big financial burden on the industry that leads to retrenchments and scaling down of operations.

- ❖ Coupled to the above is the natural drop-off rate due to retirements, natural deaths and liquidations of existing companies further emphasizing the problem of these specific categories being scarce skills.
- ❖ During the last election the President promised the people of the country affordable housing creating an urgent demand for a workforce that is trained to electrify this initiative.
- ❖ Increase in demands:

South Africa, celebrating 10 years of democracy is currently involved in numerous large projects that will dramatically increase the demand for Electrical Contractors. This will affect the current and future demands of the industry. Some projects in the pipeline are::

 1. Coega Industrial Development
 2. Soccer World Cup 2010
 3. RDP Housing
 4. Upliftment projects in economy
 5. Increased electrification in country
 6. "Formalising" of informal settlements
- ❖ Assessors and Moderators:

Between 70-80% of the role-players in the Electrical Contracting Industry consist of small and micro enterprises that do not have the human and financial resources to comply with current legislation with regards to the need for Assessors and Moderators. If we consider the above mentioned scarce skills required there is a need to have qualified Assessors and Moderators to ensure that education in quality assurance is of a high quality and standard.
- ❖ Immigration has opened up work opportunities overseas and left gaps in the market
- ❖ Black empowerment policies create opportunities for new businesses to open and increase demand for skills

3. CONSTRAINTS ON RETENTION AND DEVELOPMENT

A number of constraints over the retention and development of scarce skills were identified by the ESETA stakeholders. Typical among these were the following;

3.1 Administrative/bureaucratic requirements especially in government departments, higher education, SAQA, FET etc

This results in:

- ❖ Difficulty in accessing information;
- ❖ An inability/unwillingness of small businesses to handle all the redtape involved with WSPs etc;
- ❖ A perception of the SDL being just another tax;
- ❖ A perception by SMMEs that the government makes it more difficult for them to do business
- ❖ Difficulties in registering qualifications, learnerships etc.

3.2 School leavers do not have the required levels of Maths and Science knowledge

3.3 Learnerships that are required by the Energy Sector are accredited by other SETAs

3.4 An inability to attract new entrants to work in the Energy Sector. This is because of:

- ❖ Negative perceptions about Nuclear Energy
- ❖ Lack of R & D in the industry to attract top entrants (there is no centre of excellence or adequate research facility)
- ❖ A lack of information regarding opportunities in the sector (especially in the Nuclear and Renewable Energy field)

- ❖ A perceived lack of mobility in some sectors e.g. nuclear energy is perceived to be a specialized skill
 - ❖ The time taken to achieve qualifications e.g. engineering, nuclear energy etc
 - ❖ Limitations on job growth in the industry with few career paths especially in nuclear energy
- 3.5 Loss of know-how, and skill through an ageing workforce, a brain-drain overseas, the impact of AIDS especially among the Electrical Contracting sector. This often results in a shortage of mentors able to pass on knowledge and skill
- 3.6 Inability to identify potential in candidates who wish to enter the professions associated with the Energy Sector
- 3.7 Inability to access meaningful training in the sector. This is caused by:
- ❖ Reliance on technology suppliers to do the training in certain sub-sectors;
 - ❖ No incentives for SMMEs to buy-in to the process of skills development
 - ❖ Unavailability of learnerships unit standards and qualifications in certain sub-sectors of the Energy sector; for example, in Nuclear and Renewable Energy
 - ❖ A limited number of accredited providers and no “centres of excellence”.

4 HIGH LEVEL STRATEGIES

Each sub-sector workshop identified a number of actions and strategies to address the retention and development of their identified scarce skills. Clearly there are overlaps in the board strategic direction although significant differences will occur in the execution of the specific actions/projects.

4.1 NUCLEAR AND RENEWABLE ENERGY

The following strategies were identified by this sub-sector

4.1.1 Research and Development Strategy

This strategy had two discernable themes or sub-strategies

- ❖ A Technology sub-strategy that included actions such as; creating “centers of excellence”, sponsorship of R&D and the introduction of “Energy Chairs” and laboratories at Universities
- ❖ An Education and Training sub-strategy that included actions such as; establishing Maths and Science Schools of excellence through DOE/DOL collaboration, training of educators in Maths and Science; and structuring the curriculum to address Maths and Science needs. All these actions would require consultation with the relevant government departments.
- ❖ A further element of the Education and Training sub-strategy was to develop assessment tools and programmes to assess the potential of aspirant work seekers for the Energy sector.

4.1.2 Curriculum Development Strategy

This strategy includes actions to develop learnerships in scarce skill areas; establishing thought leadership partnerships with other sectors and involving stakeholders in the working of unit standards.

4.1.3 Marketing and Communication Strategy

This strategy includes actions to market the Energy sector to schools, universities, SMMEs and the public.

Included in the strategy is a focus on lobbying for change with the relevant government departments

4.1.4 Fund Strategy

This strategy includes funding for scarce skills development projects and a bursary scheme for study in scarce skills.

4.1.5 Skills Retention Support Strategy

This strategy includes linking scarce skills development programmes to company succession plans, mentorship programmes etc., training mentors and coaches and supporting industry role players in developing industry-wide retention strategies.

4.1.6 SMME Strategy

Although this was identified as an important strategy for the ESETA as a whole, this sub-sector did not generate any specific actions

4.2 GENERATION, TRANSMISSION AND DISTRIBUTION OF ELECTRICITY

The following strategies were identified by this sub-sector:

4.2.1 Research and Development strategy

As with the Nuclear and Renewable Energy sub-sectors the Eskom participants identified this as an important strategy. Actions included performing a skills audit and creating a skills balance sheet; reviewing and establishing where necessary relevant SGBs; and identifying and supporting research centers

4.2.2 Marketing and Communication strategy

This strategy included actions such as lobbying and developing stakeholder participation structures.

4.2.3 Partnership Strategy

This strategy included actions such as strengthening provider relations in the sector; forming partnerships with supply companies to design learning material; and forming partnerships with universities/research centers.

4.2.4 Delivery Strategy

This strategy focused on the delivery of training and included actions such as establishing a commercially – driven training academy with support from higher education institutions, establishing a technical skills resource center; and developing centers of excellence for delivery

4.2.5 Funding Strategy

This strategy was identified to ensure appropriate funding for scarce skills development.

4.3 ELECTRICAL CONTRACTING

The key strategic theme in this field was to use the ECA as a conduit for two strategies

4.3.1 Marketing and Communication strategy

The essence of this strategy is to use the ECA Regional Offices and Network of Employers to conduct a marketing, communication and lobbying campaign with the express purpose of raising awareness among ECA members, government and other relevant bodies of the need to develop scarce skills in the sub-sector.

4.3.2 SMME Strategy

The ECA is well placed to assist in the development of the SMME segment of the sector. Actions supporting this strategy include introducing “Help Centers” to assist new entrants into the labour market and/or self employment; providing training and technical support to SMMEs or emerging businesses; and providing business skills.

4.3.3 Partnership Strategy

This involved actions such as establishing memoranda of understanding (MOUs) with other SETAs; and entering into service level agreements with the DOL and other strategic partners in the implementation of the scarce skills strategy.

5. CONSOLIDATED STRATEGY

It is clear that the participants in the three stakeholder workshops achieved a certain consistency in thinking around the strategies required. If one were to consolidate the outputs of all three workshops, we would be able to identify the following broad strategies.

- ❖ Research and Development Strategy (including curriculum Development)
- ❖ Partnership strategy
- ❖ Marketing and Communication Strategy (including lobbying)
- ❖ Delivery Strategy
- ❖ Skills Retention Support Strategy
- ❖ Funding Strategy
- ❖ SMME Strategy

Because of the importance of the SMME sector for the creation of jobs it is perhaps appropriate to have a separate strategy for the marketing and delivery of

services to the SMME sector. Another way is to view the SMMEs as an important segment for each of the above strategies.

6. NEXT STEPS

The next steps in the process would cover the following

- ❖ Providing the participants in the stakeholder groups with an opportunity to comment and refine this draft report
- ❖ Establishing projects within each of the strategies with terms of reference, resources, deliverables, timelines, and accountabilities
- ❖ Developing further actions and action plans within these projects
- ❖ Establishing an agreed upon process and system for measuring and reporting on progress
- ❖ Presenting a final strategic plan to EXCO and the Board of the ESETA for sign-off.