



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

SPEECH AT THE OPENING OF A NEW ENGINEERING BUILDING, NORTH-WEST UNIVERSITY – POTCHEFSTROOM CAMPUS ON THE 12TH OF JUNE 2012 *The response from the Department should focus on “How Higher Education Institutions should address the shortage of engineers in order to ensure the development and maintenance of our country’s infrastructure”.*

Good afternoon

Programme Director,

Vice-Chancellor: Dr Theuns Eloff,

Councillor Tsumani

Rector and Vice Rectors of the various campuses

Senior Management, Staff, Students of the University

Distinguished guests

Ladies and Gentlemen

On behalf of the Ministry and the Department of Higher Education and Training, I thank you for the opportunity to part of this momentous occasion.

In 2009, government adopted the Medium Term Strategic Framework (MTSF) for 2009/10 to 2014/15. Strategic priority Number 4 of the MTSF is to strengthen the skills and human resources base, and the particular responsibility of the Department of Higher Education and Training (DHET) is to develop a skilled and capable workforce to support an inclusive growth path (Outcome 5 of the 12 outcomes of government).

The Minister responded to Outcome 5 by agreeing on a number of outputs that can be measured over time. In the Presidency's Performance Monitoring and Evaluation (PME) system, outcome 5 is subdivided into outputs of which Output 4: Increase access to high level occupationally-directed programmes in needed areas such as engineering, health sciences, natural and physical sciences, as well as increasing the graduate output of teachers" is an area that requires close cooperation between the department of HET and public higher education institutions as well as other stakeholders such as the Engineering Council of South Africa(ECSA).

Some of the targets to increase graduate outputs by 2014 include:

- Engineering Sciences to 15 000 per annum
- Natural and Physical Sciences to 8 000 per annum
- Honours graduates to 20 000 per annum
- Research masters graduates to 4 500 per annum
- Doctoral graduates to 1 350 per annum

Achievement of this output requires complete cooperation between all stakeholders involved in and benefiting from, education and training in South Africa, from high schools to universities, quality councils, engineering professional body and the business sector. Last year the Engineering Council of South Africa (ECSA) launched a national initiative to tackle the chronic shortage of engineering skills, in line with government's plan to develop 15 000 engineers by 2014. ECSA has indicated that currently one engineer services over 3 000 people in South Africa compared with 227 in Brazil and 543 in Malaysia. This situation points to one thing: South Africa has a serious shortage of engineers.

South Africa is facing many challenges to improve infrastructure for economic development and municipal service delivery. To ensure an increase of access to services for South Africans, public infrastructure programmes are being implemented.

Despite the efforts from government, there is still a huge backlog of municipal infrastructure development in certain communities, because of the shortage of engineering practitioners and the communities growing need for basic services. The shortage of engineering practitioners is evident in the number of competent engineers available for ongoing infrastructure projects. The shortage has also lead to cases where work which requires input of competent engineers is carried out without such input. However, this cannot be allowed to continue as all spheres of government are depended on engineering services to address vital needs for South African communities.

Engineers are a vital component to the South African economy and it is crucial that we take these results seriously to ensure we retain their key skills. As a result, it is important that the universities look at the issue of skills shortages and whether enough is being done to promote the profession among young South Africans, particularly those from disadvantaged backgrounds. Our concerns relate to both creating access as well ensuring success of our graduates. This is the area which is one where we need to develop close collaborative mechanisms and ensure that we are all working towards a common vision.

In December 2011, the Department met with ECSA to address key challenges in the engineering profession; to determine alternative interventions that may be feasible; and to determine a framework on how to proceed further by engaging other relevant stakeholders. The discussion included amongst others the following issues:

- Challenges in the engineering profession;
- Collaboration;
- Throughput rate of engineering students;
- Involvement of ECSA within the training of engineering graduates;
- Workplace training (candidacy phase);

After the meeting it was recommended that a National Strategy for engineering graduates be developed in collaboration with the DHET and ECSA.

For the engineering profession to be able to make contributions to South Africa's public infrastructure programmes, the country must have the human resources that are manpower with sound education and quality training. . Universities are the primary source of knowledge production for the country. Higher education institutions are expected to produce new knowledge and innovation for the expansion of national imperatives and the transformation of South African society. Therefore a question to be posed to all universities across the country is: To what extent is the university

- actively and purposefully developing scarce skills,
- contributing to enhanced access to training and educational opportunities,
- supporting students towards qualifying for a given profession such as engineering and
- ensuring employability of graduates?

What are some of the creative ways in which higher education institutions should play in addressing the shortage of engineers in order to ensure the development and maintenance of our country's infrastructure?

- Higher education/ FET colleges should partner with Business/State owned Enterprises (SEOs) to ensure workplace training for entrants into the world of work. Universities and industry need to find more effective ways of ensuring that course content reflects the real requirements of industry and enabling students to gain practical experience of industry as part of their education. This workplace experience is highly relevant and necessary for the growth of the engineering graduates
- Increase inter-university research collaboration with industry and business. Universities should deliver (new and existing) engineering programmes in co-

operation with other (national and international) businesses and industries to avoid duplication and support the idea of accreditation, articulation, joint educational ventures, cooperative educations, etc.

Addressing the shortage of engineers requires urgent initiatives on the part not just of industry and the universities, but also Government. The excess need for new and improved infrastructure, confirms the challenge of a huge backlog due to the fact that infrastructure funding from government was not part of the funding framework for almost 10 years. Structural maintenance has fallen behind and as a result, the backlog has had an adverse affect on quite a few universities' infrastructure and facilities.

The substantial investment in infrastructure in the university sector has not been possible without the commitment from government. For the period 2007/08 to 2009/10, government invested R3.6 billion and R3.265 billion in total for the period 2010/11 to 2011/12. Engineering in Universities received R316 million and engineering in universities of technologies and comprehensive universities received R538 million. With the infrastructure funds for 2012/13 to 2013/14, government is investing R3.8 billion over these two years, R298 million will be allocated to all universities for engineering: meeting scarce skills targets.

Through the *Infrastructure and Efficiency Funding* programme, the department is injecting significant funding in universities with the intention to stimulate additional contributions from industry and the private sector in general. NWU received allocation of R212.5 million for the the period 2010 -2012 from the department infrastructure grant. This funding includes R77.8 million towards the construction of new complex for engineering, including equipment on NWU Potchefstroom campus.

The opening of the new engineering building at a time when student demand at this institution exceeds its capacity is an exciting occasion for NWU as well as the

Ministry. This partnership between government, specifically the DHET and individual institutions has resulted in several exciting projects that contribute to development of our capacity in higher education and specifically in targeted areas like education, science, technology and accommodation.

Alongside the focus on infrastructure must be a drive to improve teaching and learning. This should translate into improved success rates and graduate outputs. Targets set by the Department are achievable and must be at the forefront of all activities of our institutions. Closely linked to this is the need to ensure that the range of courses and programmes offered by the university meet the needs of the economy.

I would like to conclude by indicating the commitment of the Department to ensuring that support is provided and that the University continues to be vibrant and purposeful. We wish you all the best with the opening and use of the new engineering facility.

Thank you once again for the invitation and privilege of being part of this opening ceremony today.