

Youth, local content and skills capacity building

BY DINESH KUMAR PANDE,
DIRECTOR (EXPLORATION), ONGC & VICE-PRESIDENT (YOUTH & GENDER) WPC



The 3rd WPC Youth Forum is being held in India in conjunction with The Petrotech 2010 Conference, 31 October to 3 November, 2010 and the theme – ‘Global Energy Equilibrium’ – has been aptly chosen to reflect today’s aspirations for mankind. The prime factor dominating every sphere of our activity and one that has the ability to shift socio-political paradigms is undoubtedly, ‘Energy Security’. Globally, the demands of a burgeoning population and rapidly growing economies are putting a strain on finite energy resources. Therefore, it is imperative to tap all the resources that will enable the energy sector to achieve its goal of improving the life of mankind. Such continuous pressure has compelled the industry to require greater contributions in terms of financial resources and technologies. But, most importantly, a new breed of technically-qualified and industry-orientated workers is required – these young, creative minds can then use their talents to produce positive business results. In the current climate, the young must seriously think about what the future holds for them in terms of energy security and what they can do about it.

In the last week of March 2010, student teams from six major academic institutions focusing on energy-related studies met at The University of Petroleum and Energy Studies, in Dehradun, India and presented their thoughts on Global Energy Equilibrium. It gave the author an opportunity to gain an insight into the thought processes of a generation that has to focus its energy on exploration, utilising existing resources and finding alternatives – all this, of course, within acceptable economic and environmental considerations.

It is not surprising that most of their presentations focused on an optimal energy mix with the main emphasis on local energy resources. This is understandable on two counts:

- 1) The concept of borderless energy can remain only that – ‘a concept’ – on paper. Wars have been fought to redraw the boundary between nations with the sole aim of garnering maximum oil reserves. With the decisive role played by ‘petro dollars’ in world economics, the redistribution of resources is mainly guided by the socio-political relationship between nations. Hence, no nation would like to depend completely on another for its energy needs, for it would leave it vulnerable to political ransoms.
- 2) Ancient civilisations endured by being self-sufficient in their resources, including energy. Similarly, the stability of present day nations depends heavily on their management of resources. With ‘Borderless Energy’ adding an element of insecurity to the scheme of things, emphasis, by default, is given to the identification, development and management of resources, locally.

An example of the shifting energy mix, predominantly polarising towards local energy resources can be seen from the

statistics of India’s energy mix. Currently, India’s Primary energy mix is: Coal 53 per cent; Oil 33 per cent; Gas 9 per cent; Nuclear 1 per cent; and Others (Hydroelectric & Renewable) 2.63 per cent. In about 10 years’ time, that is by 2020, the energy mix estimated for India is: Coal 30 per cent; Oil 25 per cent; Gas 16 per cent; Nuclear 5 per cent; and Others 24 per cent. It can be observed that coal will still dominate the energy mix because of its local availability. However, the interesting development in 2020, would be the increase in the percentages of Gas, Nuclear and Others, clearly indicating the focus on local availability.

Increasing the skills capacity of local youth is essential if the local energy resource is to be managed and developed. India, the fastest-growing economy along with China, is not only focusing its efforts on acquiring exploratory blocks and producing assets around the world but is also taking steps to develop local skills. The greatest asset that India has is its Youth, with 66 per cent of its population under 35 years of age. The average age of the population in 2020 is expected to be 29 years. This Youth percentage in the population is termed by experts as a ‘Demographic Dividend’. However, this youth percentage can only be a ‘Demographic Dividend’ if this part of the population is adequately and appropriately skilled. For this, (i) Education, (ii) Association with Industry and (iii) Awareness of Technology Development through global networking are all critical elements.

Skills development of the young, through education is a vital factor and one taken very seriously by responsible governments. The number of university-level institutions in India at the beginning of the decade just after it became independent in 1950, was 32. There were just 695 colleges affiliated to these universities with a combined student enrolment of 173,696. By the turn of this century the number of universities in India had increased to 256, with 12,342 colleges and 8,399,443 students enrolled. Approximately 40 per cent of those who enrolled were female students, thus indicating a positive development in a traditionally conservative society.

Within the petroleum industry, Energy Security has become an important factor in formulating the country’s economic strategy. During the past few decades there has been a strong focus on energy studies, with premier institutes dealing specifically with the Petroleum Exploration and Production (E&P) Industry being established in India. It is pleasing to note that there has been a very enthusiastic response from students.

Skills development, in a strict sense, is not limited to education alone. The spurt of educational institutions has given the required academic thrust, and, depending on the socio-economic and industrial requirement of the country, has varied the subjects of interest from time to time. Medicine



and Mechanical Engineering have always been popular, whilst Information Technology (IT) has given rise to a scramble for subjects such as Electronics & Communication Engineering and Computer Science. India, with its strong English language base and its partiality towards Mathematics has attained a dominant position in the IT/Software industry. So, it can be reasonably stated that industry requirement is the main catalyst in inspiring youth to sharpen its skills in the desired subject. Thus, the underlying fact in local skills development is that, although academia is in the forefront, the contribution of the industry is essential in giving the right kind of impetus to the effort. The involvement of industry is in its own interest as it needs skilled manpower – all the more critical in heavily technology-dependent industries like petroleum, both upstream and downstream.

Most of the oil industries are facing the problem of an ageing workforce; the average age of people in the oil industry is almost 50. There has been talk of manpower shortages, especially in the E&P industry, so it is in the industry's interest to encourage skills development. The introduction of young, fresh talent can only help to boost exploration. Under the concept of an 'Industry-Academia' interface, various steps are being taken to encourage industry awareness. As well as the frequent visits of professionals as faculty in many industries, in India E&P companies establish 'Chairs' in various Universities as part of the Industry-Academia interface. Student chapters of various professional associations are also opened in educational institutions where students get to meet industry experts and interact with them. This will be helpful in inducing research orientation, both fundamental and applied, within the industry. Academia, for its part has to ready itself for the challenge of meeting the growing expectations of the industry. The number of institutions with energy-related subjects as a core discipline is to be increased and the curriculum is to be tailored and standardised according to industry requirements. Academia is also expected to take up R&D projects for addressing exploration, reservoir and drilling problems, whether conventional or unconventional resources. Industry is required to come forward to provide assistance in designing course contents and providing industry-orientated practical education.

Apart from education and industry association, the third important component of skills development is exposure to global developments and techniques. Encouraging the participation of students and young professionals in international conferences is one way of granting them exposure. For example, the WPC Youth Forum has become a platform where the common interests and concerns of energy issues at local levels are shared, discussed and deliberated by the young who are endeavouring to find globally acceptable solutions. The youth



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of developed countries can interact with young people from under-developed countries resulting in orientating their thought processes, not only to explore and exploit existing energy reserves, but also to find alternatives to dwindling resources. Recognising the importance of youth networking in their skills development, the 3rd WPC Youth Conference is being held in conjunction with The Petrotech 2010 Conference in India later this year. The Honourable Prime Minister of India, Dr Manmohan Singh will inaugurate the conference, underlining the Indian government's view on the importance of global networking on energy-related matters.

Finally, on local skills development addresses to students, the following elements must be prioritised:

- 1) To spread awareness of environmentally-acceptable, effective, energy solutions
- 2) To conserve energy by focusing on energy-efficient systems
- 3) To advocate new technology and focus on research for providing viable alternative energy security
- 4) To apprise youth of developing countries the present state of growth in the energy sector and additionally, to make the youth of advanced countries aware of their responsibilities towards their counterparts in developing countries
- 5) To encourage young women to join us in our bid to provide global energy security and improve the gender ratio in our sector.

The 3rd WPC Petrotech 2010 Youth Forum is an effort by the World Petroleum Council to focus on the above, and, with the involvement of senior government functionaries, is expected to generate interest amongst junior staff in the energy industry. The author, as Vice-President (Youth & Gender) of WPC is pleased to invite the world's young to the forum.

Further details of the programme are available on the website: www.fueltheyouth.com □