

# First Graduate Lecture: Indonesia Needs Energy Revolution

Thursday, 28 August 2014 WIB, By: Marwati

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State Enterprise Minister, Dahlan Iskan, said Indonesia needs to do energy revolution due to the high need of energy. The number of motor vehicles increases every year, not parallel to the decreasing oil production, hence causing oil shortage.

Minister Dahlan Iskan said at Ghra Sabha Pramana building during the first lecture for graduate school students, Indonesia has to face fuel shortage each year. On the other side, natural gas production continues to increase. The problem that arises is how to make people to shift to gas.

In Dahlan's view, there are many other problems relating to gases. Location such as the one in Tangguh (Papua) is very isolated whereas the areas that use motor vehicles the most are Java and Sumatera.

"The gas location in Papua has posed a challenge for us, how to transport this to Java. Other challenges are infrastructure, how to carry gases," he said.

He explained one way to do is to liquify the gas under minus 160 degrees temperature, but the

shipment of this would cost a fortune due to the special design of the ships. Upon arriving in Java, the liquified gas is reconverted to gas.

Another way is to make the gas into solid substance so one tube of 100 meter cubic volume can contain up to 400 meter cubic. The tube needs to be very strong so as to prevent it from exploding.

"It is that kind of tube that needs to be mass produced. Thus, ships, trains, large trucks, mining trucks, etc, will no longer use fuel but gas. The problem is now that the cost of the tube is too expensive while people still fear the possibility of gas exploding," he said.

Therefore, Dahlan appreciated a research finding done by a UGM lecturer that can produce an equipment to reduce pressures without reducing the volume. The pressure in a tube containing 400 cubic with 200 bar of pressure is reduced down to 30 bar only.

"As a matter of fact, I don't really expect it to be as low as 30 bar, because 60 bar is pretty extraordinary. The price of the tube will get cheaper, too, as it does not have to extra specially designed. Also, people will get less scared due to the low pressure," he added.

In this case, the State Enterprises Ministry is ready to pioneer in transporting the gas. It is estimated that under this mechanism, fuel subsidy amounting to 300 trillions can be minimised. "Under this mechanism, fuel subsidy can reduce by tens of trillions," he said.

Meanwhile, Academic Director of UGM, Dr. Agr. Ir. Sri Peni Wastutiningsih, said Universitas Gadjah Mada for 2014/2015 has accepted as many as 4,246 new graduate students for 86 study programs in S2 level, 27 programs for specialist level, and 41 study programs for doctoral level.

"This year UGM also accepts international students from 18 countries in Africa, America, Europe, and Asia", she said.

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