

**Mike Gambrell Remarks  
Saudi Energy Forum**

Good morning. Sabah Al Khair.

Welcome. I'm very pleased and honored to represent Dow at this very important event, and particularly to be your host for our breakfast this morning.

First, I want to personally welcome our special guests here today.

Dow is proud to be a sponsor of the Saudi Energy Forum.

And we are proud to grow Dow's presence here in Saudi Arabia.

Dow has been operating in the Middle East as part of the business and social community for **over three decades**. During that time, Dow has pursued steady, sustainable growth by setting up manufacturing facilities as well as sales centers. And our presence has grown with state-of-the-art petrochemical complexes with select local partners such as Petrochemical Industries Company of Kuwait. Our joint ventures of EQUATE, MEGlobal and Equipolymers are significant players in their own right.

And as you know in July, we announced plans for a joint venture between Dow and Saudi Aramco to build one of the world's largest chemicals and plastics manufacturing complex at Ras Tanura.

Dow was very honored to have been chosen for this opportunity. **Saudi Aramco and Dow are ideal partners in many ways.**

Dow's approach to Joint Ventures is to combine our strengths with our partner's strengths -- to create new companies that are not just leaders in the region ... they are **leaders in the global industry**.

This creates a win-win for all of us. It also benefits our local communities here in the Middle East region by building value downstream and creating jobs.

My topic today is Petrochemical trends in the Middle East. But before I delve into a discussion of trends in our industry, **I want to ask your indulgence for two minutes to think bigger** ... to elevate ... and think about our place in the world. To think about what role the chemical industry plays in solving world problems – like hunger, clean water, quality housing and a cleaner environment. Think about how chemistry and people can make a difference.

### ***Human Element video***

This is what we're all about at Dow. Harnessing the power of chemistry – and the Human Element – to make positive change.

At Dow, we have a commitment to **sustainability**. Our mission is to “constantly improve what is essential to human progress by mastering science and technology.”

It is an ambitious promise.

Earlier this year, we launched our 2015 Sustainability Goals. They reflect Dow's commitment to the principles of Responsible Care®. Our 2015 Sustainability Goals have a broad external focus:

- strengthening our relationships with our communities where we operate,
- continuing to improve our product stewardship and innovation,

and

- reducing our global footprint.

Ultimately, we know that society doesn't measure our success solely on our financial results. Society measures our success on the **triple bottom line**:

- economic prosperity,
- environmental stewardship,

and

- corporate social responsibility.

I know this is something that the Kingdom of Saudi Arabia understands deeply. Your commitment to the triple bottom line is demonstrated in economic policies that focus on developing what's good for the Kingdom, including economic diversification, job creation, and improvement of the quality of life of all people here.

And that brings me to my topic, which is: **Trends in the Middle East**. Our speakers yesterday touched on many of the major trends, so I'd like to build on some of the key points from yesterday ... but speak from the **vantage point** of Dow, the world's largest producer of chemicals and plastics.

The first trend we've already spoken about ... it's the drive for sustainability.

**The second trend** in our industry is the historic shift of the center of gravity for the petrochemical industry -- from the West to the East. In particular, the Middle East is becoming the focal point for growth in petrochemicals production.

This shift is driven by many factors, which you're all very familiar with:

- Access to lower and more competitively priced feed stocks.
- Closer proximity to the world's fastest growing markets – China, India and Southeast Asia.
- Strong political support to build a competitive export-based industry
- Liquidity in the Middle East for project finance.
- Tax incentives that welcome foreign partners.

And

- The newest cracking facilities, which have the advantage of scale and the latest technology.

Of these drivers, **the first – low cost feedstocks – is the most significant.** As you well know, half of the world's ethylene capacity growth in the next five years will be concentrated in the Middle East Regions.

Clearly, the Middle East – and the Kingdom of Saudi Arabia – has a lot going for it. But how can the Kingdom best capitalize on these advantages to become a true global leader in the chemical industry?

**Here are Dow's predictions of what it will take to be a successful global leader in the petrochemical industry**

1. **It takes low cost feedstocks.** The Kingdom has this already, of course.
2. **It takes scale.** New construction must be world scale and world class. The Kingdom is doing this.
3. **It takes the ability to go downstream** – A lot of polyethylene is being made here... but think about where it goes. It is shipped to converters and fabricators in places like China, where end products are then made and then either consumed in country or shipped to consumers around the world. The Kingdom of Saudi Arabia has

announced its vision to attract downstream customers to build in the Kingdom – just as China did in the past decade.

And, ... this is an important strategy.

The challenge for the Middle East in going downstream, versus what China did, is that the **market demand for end use products** here in the Middle East is, relatively speaking, still very small. The Middle East does not have the market growth of China or India. However, populations here are growing and standards of living are rising. As the economies of Middle Eastern nations become more diversified beyond oil & gas, economic growth will create more market demand here for end-use products made from chemicals and plastics.

But where will those end use products be made? Today the “global assembly line” is this: **Middle East oil and petrochemicals → to China converters, processors and OEMs → to end use markets in North America and Europe**. But as we say in the U.S., why not cut out the middleman? Why not shorten the global assembly line, to make the end-use products here in the Middle East, and ship directly to consumer markets. This is your vision and a very good one... **but not so easy to execute**.

**To do it, you need more than natural resources. You need human resources, or as we like to say in Dow, the “Human Element.”** To go downstream, you need expertise in downstream markets such as packaging, adhesives, coatings, and systems. This requires a new level of technical depth around fabrication technologies, such as

extrusion, blow molding and rotomolding of plastics ... and for chemicals, it requires expertise in surface science, formulation, emulsion science, analytical science, etc.

Here India and China are ahead. They are investing heavily in R&D infrastructure and human capital to become the “brains” of the chemical industry. Experts are predicting that **new molecules and breakthroughs in the chemical industry will now come from China and India**, not the U.S. and Europe. The Middle East will need to consider where it wants to play in this scenario and the new “global assembly line.”

Another factor in being a global leader in the petrochemical industry ....

4. **It takes the ability to go beyond just polyolefins.** To make really “interesting” products, you need more than olefin chemistry ... you also need aromatic chemistry and chlorine chemistry. These are the critical building blocks for thermosets, vinyl, specialty chemicals, ag products and pharmaceuticals. Dow’s planned complex with Saudi Aramco at Ras Tanura will include this type of broader product slate, which will open up endless possibilities for chemical manufacturing at world scale in the Kingdom.
5. **It will take global reach.** Global players need a global supply chain with the ability to deliver product anywhere in the world. They need global sales support and technical service, with the ability to sell to and service customers anywhere in the

world. This is something that Middle East companies can build themselves, but this will take time and would require squeezing into some crowded markets. Or Middle East companies can partner with a company that has a global franchise already. The joint venture between Saudi Aramco and Dow is a perfect example of this.

6. **And most importantly for all of these expectations, it takes people – the Human Element.** To be a global leader, you need the best people with deep and broad technical skills. This means going beyond the technical ability needed for building and running plants... it means you have to embrace innovation, research and development, technical service, process research. Competencies in areas such as catalysis, analytical science, mixing, separations, surface science.

You need to have strong investment in your own education system – promoting home-grown talent in the fields of math and science. You need to be able to draw on the best and brightest talent from universities all over the world. Again, India and China are investing heavily in building their R&D and technical competencies to position their countries as the new global leaders in the chemicals and plastics industry. **For the Middle East to be a significant player in downstream chemicals and plastics, the industry will need to make a stronger commitment to research and science.**

I believe the Middle East has what it takes to lead the chemical industry in the next century.

**But with leadership comes responsibility.** And that brings us full circle to the topic we started with – sustainability.

As leaders, we have a responsibility to operate sustainably. That includes how we manage our waste, and making sure our products are used responsibly. Sustainability means understanding that our resources are not unlimited.

Chemistry is the enabling science. It enables every other industry – electronics, agriculture, pharmaceuticals and medicine, countless others. It enables a country to diversify its industry -- creating new industries and jobs, making new consumer goods and services available to everybody.

As leaders, it's our responsibility to apply our science and technology for solving human problems. I invite you to join us in harnessing the “human element” to make the world a more sustainable place.

Thank you.