

DRAFT REMARKS

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GREETINGS/THANKS/INTRODUCTION:

Good afternoon and thank you for that kind introduction.

On behalf of BASF's 112,000 employees worldwide, including our 17,000 colleagues here in North America, I'd like to thank Beth Chappell, Steve Grigorian, our Club sponsor today [member sponsor,] the Board of Directors and the membership of the Detroit Economic Club for this valuable opportunity.

Speaking here at this widely recognized and respected forum, which for eight decades has been a catalyst for the intellectual discourse which drive growth and opportunity, is indeed a pleasure and an honor

The Detroit Economic Club is where the most informed and articulate voices provide insight on the most definitive and weighty economic, business and public policy topics of the day.

And while I don't claim to be the former, I certainly hope to do the latter.

I noticed on the DEC website that my talk today comes between those by Steve Forbes and Mary Bara – so in consecutive meetings, the Club will gain perspective on capitalism, chemistry and cars.

This is an apt juxtaposition, since chemistry, as I'll discuss, is a bridge between the other two...and an enabler of both.

The main focus of my remarks today will be a discussion of the most significant development for the US chemical industry in decades – the advent of the shale gas era.

I'll talk about shale gas' impact on natural gas supply and price.

I'll describe the significant competitive advantage shale gas presents to US manufacturing and US chemicals in particular and what BASF is doing strategically to tap into that advantage.

And lastly, I'll talk about a few of the risks that could diminish or even neutralize that potential if not addressed.

BACKGROUND ON BASF

Let's start with some background on BASF.

In Germany and most parts of Europe, BASF is about as widely known as any B to B enterprise can be.

Here in the US, we're not exactly a household name, but wherever I go people seem to be aware that we don't make the products you buy, we make them better.

For those who don't know, that was the tagline of an ad campaign we ran from 1990 to 2006 – it was well received and apparently quite memorable, but in retrospect it said more about what we **don't** do than what we **actually** do.

The other thing I often hear when I say "BASF" in the US is "sure, you make the tapes."

Well, we did.

In fact, BASF produced the very first magnetic audio tapes back in 1932.

We spun that business off in 1996, by which time CDs and PCs had, shall we say, made the market a poor candidate for growth.

So who are we and what **DO** we do?

Simply put, we are the world's leading chemical company, in terms of annual sales, global footprint and the diversity of our portfolio.

Next year, we will celebrate the 150th anniversary of our founding in Ludwigshafen, Located in Germany's South-West on the Rhein River, Ludwigshafen is still the site of our global headquarters and the world's largest wholly owned and operated chemical complex.

We operate 380 production facilities on five continents, serve all major industries with and employ more than 112,000 people.

Sales from our five business segments last year were €74 billion.

BASF's North American business region, which includes Canada, the US, Mexico, the Caribbean and Central America is home to 17,000 BASF employees, 100 production sites and 27 R&D sites.

Our North American Headquarters, which achieved double LEED Platinum certification using our own sustainable construction solutions, is in Florham Park, New Jersey.

2013 sales by BASF businesses in the region amounted to \$19.3 billion, which would make us the second largest chemical company in North America.

TIES TO DETROIT AREA & AUTOMOTIVE

Our local history in Metro Detroit dates to 1969, when BASF purchased Wyandotte Chemical Corporation.

Unsurprisingly, much of what we do here is related to being a world-class supplier-of-choice to the American auto industry.

Today, our Wyandotte site, about 10 miles downriver from here, is one of our biggest and most important in North America.

Our nearly 1,100 employees in Wyandotte primarily support our Dispersions and Pigments business, including production and R&D.

We also operate a coatings R&D site in nearby Southfield, which employs more than 300 people, and a colorants production site in Livonia.

Our dispersions and pigments offerings for automotive include chemistries for paints, protective coatings, sealants, adhesives and more.

As [DEC sponsor] mentioned in the intro, I led the 2006 acquisition and integration of Engelhard Corporation.

This addition to our portfolio made BASF the world's leading supplier of catalytic converters to the automotive industry.

Our global Catalysts Division, headquartered in New Jersey, operates two production sites in Metro Detroit – one in Wixom and another in Lincoln Park.

The Division also operates a Battery Materials business, which is focused on developing solutions for e-mobility and has a pair of sites in the Rochester Hills/Troy area.

But catalysts, coatings, colorants and battery materials, are a mere fraction of BASF's offerings to the automotive industry.

For BASF, the auto sector is one of our core customer industries, both globally and here in North America.

The number of cars on our streets is growing constantly. By 2020, there will be approximately 1.2 billion cars on the road worldwide, an increase of nearly 300 million compared to 2012.

The automotive industry is facing new challenges: global population growth, rising standards of living in emerging markets, increasing urbanization, climate change and the limited availability of fossil fuels require new concepts with regard to sustainability and energy efficiency.

As the world's leading automotive supplier in the chemical industry, BASF can help automakers address these global automotive trends:

- Lightweighting
- Emissions Reduction
- Heat Management
- Electric-Mobility
- Passenger Experience
- Fuel Efficiency

We can do this because we have the most extensive product portfolio in the automotive industry.

From engineering plastics, coatings and fuel additives to catalysts, battery materials and brake fluids to chemicals for leather and textiles, our customers get the best products out there.

As we do with our customers in dozens of industries, we collaborate closely with our automotive customers, to develop solutions and technologies specific to their needs, objectives and priorities.

WE CREATE CHEMISTRY

This collaborative approach -- connecting with our customers, innovating with them and serving as their go-to provider of comprehensive chemistry solutions, is the bedrock of BASF's global business strategy, which we call "We create chemistry."

In our view, the phrase captures the essence of our approach to business -- so much so that this month the phrase "We create chemistry" was integrated into our logo, taking the place of our previous brand claim: The Chemical Company.

Let me stress that this change was in **no way** influenced by how much "The Chemical Company" irritated our competitors -- I actually considered this to be a collateral benefit.

But "The Chemical Company" was never about self-glorification, it was about accentuating who we are, what we do and our aspiration to lead and exemplify our industry in the best way possible.

As I said earlier, next year marks BASF's 150th year of operation.

Sustaining a company -- any company -- for a century and a half requires continuous evolution; in every aspect of the enterprise, including our brand mark.

"We create chemistry" specifically highlights our forward-looking focus on providing functionalized chemistry products and solutions -- connecting our R&D and innovation directly to our customers' current or future needs.

While the nucleus of our business is creating chemicals, creating chemistry is more than that -- "We create chemistry" is also about creating human chemistry

It's about connections between industries, disciplines, businesses, institutions and individuals -- relationships, partnerships, collaborations that not only drive economic growth, but improve the very quality and sustainability of life itself.

SUSTAINABILITY

Taking this a step further, when we developed our current global strategy in 2010, we adopted a new company purpose statement: "We create chemistry for a sustainable future."

Sustainability plays a prominent and significant role in our business approach – both in terms of preserving our license to operate and as the greatest frontier for innovation-driven opportunity.

On the first point, ecology, health and safety are paramount to us.

We strive to continuously optimize our energy efficiency, push our operational and occupational safety performance to new heights and minimize the environmental impact of our operations.

While I won't spend a lot of time detailing the specifics of these efforts, suffice it to say that our self-imposed EH&S targets are quite ambitious and they and our performance against them are readily available in our annual report and on our website.

On the second point, we see sustainability as the key market driver of the future.

Why? Two reasons:

1) the Earth's resources are limited; (2) the world's population and its expectations are growing.

It is widely expected that Earth will have another 2 billion inhabitants by 2050 – 9 billion people to feed, house, move and power from a finite pool of resources.

The sustainable solutions will require high-impact scientific advancements, and BASF is harnessing the power of chemistry to realize them.

INNOVATION

Chemistry is an enabler of advancement and progress.

Our innovations will make possible the products and solutions to address the pressing sustainability challenges of today and tomorrow.

We spend more than \$2 billion annually on research and development.

We have more than 10,000 employees dedicated to scientific exploration, discovery, and application – 1,750 here in North America.

We filed 34,267 patents last year and were the top chemical company on the Patent Asset Index for the third year in a row.

We create chemistry with an international cross-disciplinary network of 600 top research universities and institutions, partners in industry and high-tech joint ventures.

Toward this end, we have been significantly expanding our working relationships with top American research universities, including the establishment of two academic postdoctoral research hubs.

On the east coast in 2013, we established the North America Center for Research on Advanced Materials with Harvard, MIT and UMASS at Amherst. This joint multi-discipline initiative with some of the world's top research universities is working to bring material innovations to the construction, energy and automotive industries.

On the west coast, we are collaborating with UCAL Berkeley, UCLA and Stanford in the California Research Alliance. Established this past April, this initiative is focused on driving innovations in inorganic materials and biosciences.

Closer to home, we have active research collaborations with both Michigan State and U of M on projects involving advanced materials and plant science.

North America, as the world's second largest chemical market and the world innovation capital, has been an important region for BASF since we began investing and growing here more than six decades ago.

SHALE GAS

For BASF and the entire chemical industry, the new cost advantages of shale gas, as a feedstock and an energy source, have added yet another dimension to this region's attractiveness as a market for our products and a great place to grow.

The new economic dynamics of shale gas been called a "game changer" for chemistry and other energy-intensive industries in North America.

It's regarded by many as America's ticket to energy independence.

Others view it as a key driver of economic recovery and long-term growth.

It's changed the way industry looks at the North American market.

Shale gas is one of the most significant developments in the history of the North American chemical industry.

For BASF, the availability of shale gas as both a fuel and a feedstock for chemical production continues to create new opportunities for profitable growth in the region.

We've all heard the term, but what exactly is shale gas?

In simple terms, the term refers to deposits of natural gas trapped within underground sedimentary rock formations.

As compared to the more porous rock associated with "conventional" natural gas extraction, shale's tighter less permeable structure makes extracting the gas particularly challenging.

According to the U.S. Energy Information Agency, there are more than 750 trillion cubic feet of technically recoverable shale gas and 24 billion barrels shale oil, or by many estimates, 100 years-worth of supply.

While the existence of shale gas has been known for decades, accessing these shale gas "plays" as they are called, has until recently been technically challenging and economically prohibitive.

Advancements in the techniques of horizontal drilling and hydraulic fracturing, or "fracking," have made the extraction of these resources viable and cost-effective.

Shale gas now accounts for more than 40% of all U.S. natural gas production.

The EIA projects U.S. natural gas production to increase from 23.0 trillion cubic feet in 2011 to 33.1 trillion cubic feet in 2040, a 44% increase.

This increase in domestic natural gas production is almost entirely attributable to projected growth in shale gas production, which the EIA expects to grow from 7.8 trillion cubic feet in 2011 to 16.7 trillion cubic feet in 2040.

The shale gas boost to natural gas supply has driven prices down -- naturally.

The U.S. gas price in June of 2008 was \$12.69 per million BTU -- in August of 2014 it was \$3.81

Today, US gas prices are -- generally speaking -- the lowest outside the Middle East.

And as of September 3, 2014, the NYMEX Futures curve had 2015 natural gas trading at \$3.85.

The potential economic benefits and business opportunities are huge, particularly for energy-intensive industries such as iron and steel, paper, non-ferrous metal refining and yes, chemicals.

For chemistry, the availability of inexpensive natural gas means significant cost reductions for both energy and feedstock, giving North America a distinct competitive advantage as a place for well-positioned chemical companies to do business.

Chemical companies have announced more than \$100 billion worth of shale-gas driven investments in North America, according to the American Chemistry Council.

Some of these projects will be completed, others will not, but it is clear that the chemical industry as a whole is aiming to capitalize on the shale gas advantage -- BASF included.

Since 2010, we have more than doubled our annual capital expenditure in North America to about \$1 billion.

Over the next five years (2014-2018), BASF plans to invest 25% of its €20 billion global CAPEX budget here in North America.

Overall, BASF's North American investments -- those announced and those in the works -- target specific opportunities for growth; some strengthening our ability to serve existing markets and customers; some aimed at serving new markets and customers in North America; and some intended to improve our cost position in the region.

Let me give you some recent examples.

In 2012, we began a series of modifications to the **ethylene cracker** we operate in Port Arthur, Texas, with our partners Total, enabling more natural gas based raw materials (ethane) to be used for production.

We also expanded the BASF Total cracker in Port Arthur, TX with a tenth furnace, increasing ethylene capacity to more than one million metric tons.

Later in 2012 we announced plans to build a world-scale **formic acid plant** in Geismar, announced -- the first formic acid plant in North America. Formic acid, found naturally in ant venom, is a eco-efficient chemical with such diverse uses as run-way de-icing and an anti-fungal in animal feed.

Also last year, BASF and Norway-based Yara announced a possible joint investment into a **world-scale ammonia plant**.

And in May, we announced our assessment of a **world scale methane to propylene complex on** the Gulf Coast. This would be BASF's largest-ever investment in a new plant anywhere in the world.

Propylene is a key building block for many downstream petrochemicals and is a major by-product of cracking liquid petroleum – oil – which was formerly the feedstock for petrochemicals.

The conversion to natural gas feedstock, which hardly yields any propylene when cracked, has led to tighter supply and higher pricing.

A natural gas to propylene plant could provide a less expensive supply of propylene to BASF's North American operations and considerably improve our cost position.

There's no question that these investments represent BASF's high degree of confidence in the North American market as well as our recognition of the new opportunities that shale gas presents to the business of chemistry here in the U.S.

What does all this chemical industry investment and growth mean for the overall industrial and economic outlook?

CHEMISTRY AND THE ECONOMY

First, some perspective on the economic impact of chemistry in the U.S with some numbers from the American Chemistry Council, our industry's advocacy group:

First, consider that the business of chemistry directly provides 793,000 jobs in the U.S. with an average salary of \$88,800.

When our entire value chain is accounted for– upstream, downstream, construction, services -- each job in our industry supports 7.5 jobs elsewhere in the US economy; chemistry is an employment multiplier.

Now consider that more than 96 percent of all manufactured goods are directly touched by chemistry and that more than 700 billion dollars-worth of chemistry products flow through the economy each year.

All told, the business of chemistry is an 812 billion dollar enterprise in the US – that's nearly 20% of U.S. GDP.

Because our products are the constituents of most manufactured goods, the vitality of the chemical industry can be considered a major determinant of overall industrial output and economic growth.

Chemistry's omnipresent ties to industry are such that the ACC publishes its own index -- The Chemical Activity Barometer.

It accounts for everything from chlorine production to railcar loadings as a tool for identifying overall industrial and economic trends.

As you probably already surmised from my Texas accent, I'm a Dallas Cowboys fan.

And we Cowboys fans have a saying – as Romo goes, so go the Cowboys.

Well, in many respects, as the business of chemistry goes, so goes manufacturing, and by extension, so goes the economy.

Getting back to shale gas, a study released by PricewaterhouseCoopers estimates that by 2025, shale gas could lead to 1 million more workers employed in the US manufacturing sector.

The study also predicts that unimpeded shale production could reduce US manufacturers' raw materials and energy costs by as much as \$11.6 billion annually.

CHALLENGES AND RISKS TO THE SHALE GAS ADVANTAGE

So...has the North American CEO of the world's leading chemical company come to Detroit to inaugurate the Shale Gas Renaissance?

Well...no.

For one thing, neither BASF nor I are given to such hyperbole – it's kind of a German thing.

While this sometimes frustrates my American communications team, it is nevertheless true to who we are and how we do things at BASF – we're nothing if not realistic.

The truth is, despite the great potential of shale gas there are a number of obstacles and impediments to growth shale gas and the chemical industry face here in America.

FRACKING

Let's start with the most obvious one – opposition to fracking at the state and local level.

As you may have heard, the technique faces active opposition on many fronts – opposition based largely on concerns about fracking’s environmental impact – particularly to groundwater.

According to the non-profit Ford & Water Watch, governments in 25 states and more than 400 municipalities throughout the US have passed measures banning or severely limiting hydro fracturing within their jurisdictions.

Protection of both natural resources and public health are paramount to BASF – destroying natural resources for short-term profit is the worst kind of bad business. It is unsustainable for both society and the offender.

But the fact of the matter is that technology exists to allow fracking to be conducted responsibly, efficiently and with minimal risk to the environment.

Considering the magnitude of the potential benefits, not just to BASF, but to the economy and society overall, the relevant question on shale gas is not “if,” but “how.”

BASF supports responsibly-conducted hydraulic fracturing, applied in full compliance with all environmental regulations and according to the highest industry standards and practices.

Those with concerns have a right to be heard and to have those concerns taken seriously -- state and local bans on fracking are not the solution.

The economic challenges we face – unemployment, volatility, uncertainty, slow growth -- are too great to let an opportunity like shale gas slip by.

With honest dialogue, transparency, responsible implementation, accountability and appropriate regulations, we can protect the environment **and** turn the shale gas advantage into opportunity, jobs and economic growth in North America.

WORKFORCE :

If companies like BASF are going to create growth and opportunity by investing in more American production capacity, we obviously need qualified people to build, run and maintain these facilities.

Unfortunately, demographics and the academic structure have conspired to create an urgent skills gap in the U.S. manufacturing sector.

First, the population is aging -- by 2030, Americans aged 65 and older will represent 20 percent of U.S. population, according to a recent study by the U.S. Census Bureau.

Baby Boomers continue to retire from the workforce in droves, taking their highly valuable skills and know-how with them.

There are currently about 600,000 unfilled skilled manufacturing jobs in the U.S., according to a study by Deloitte LLP.

Why, when national unemployment is over 6 percent, do 600,000 good-paying manufacturing jobs go unfilled?

It's complicated, but in a nutshell, the education system simply doesn't offer much in the way of preparation for careers in the PMU disciplines; that is Production, Maintenance and Utilities – skills that are obviously key to our operations.

It's a situation that continues to intensify as shale gas investment in manufacturing continues to outpace the supply of specialized technical, craft and engineering skills.

Here in America, the education system overwhelmingly steers students toward college degrees – educational opportunities for students to pursue careers in skilled industrial and technical vocations are few and far between.

In Germany, we have options like the Dual Apprenticeship Program, whereby high school students with an interest in a technical field, such as chemical plant operations, can receive on-the-job training at a chemical manufacturing facility, even as they complete their to general studies requirements.

In June, here in Michigan, Governor Snyder signed into law a measure amending the Michigan Merit Curriculum which allows students to substitute vocational training and skilled trade courses for some of the college preparatory graduation requirements.

This is a positive step – one we hope to see expanded and replicated across the country going forward.

BASF has also been engaged with the state of Ohio in the promotion of workforce development specific to the needs of the chemical industry, including careers such as chemical plant operator and other technical trades relevant to the chemical industry, e.g., welders, machinists, etc.

In the Gulf Coast, for the past 15 years BASF has been investing in local community colleges like Brazosport College in Freeport, TX, and Lamar Institute of Technology in Beaumont, TX) to strengthen their capacity to provide preparation and education specifically linked to rewarding careers in chemical production.

Earlier in the education system, our Kids Lab program, one of several extracurricular science education initiatives we fund and conduct, has reached 50,000 elementary students to date.

“We form the best team” is one of the four bedrock strategic principles of our “We create chemistry” strategy.

Workforce development -- inside and outside of our facility gates -- is a key element of our sustainable success and our ability to turn the shale gas advantage into good jobs, growth and opportunity here in North America.

INFRASTRUCTURE

While for the sake of time and tone I won't be addressing each of the challenges facing our industry, I'd like to touch on one more because it is significant and the stakes are high: the deficient state of the transportation infrastructure.

From receiving raw materials to getting our employees to work to our ability to deliver products to customers, the ability of the chemical industry to contribute to and facilitate economic growth depends on adequate highway, rail and marine infrastructure.

In the 2013 edition of their quadrennial Report Card for American Infrastructure, the American Society of Civil Engineers gave an overall grade of D+.

If unaddressed, the poor condition of the transportation infrastructure will not only curtail chemistry's ability to grow in the U.S., it will severely limit the potential positive economic impact of the shale gas advantage.

From bridges, tunnels and roadways, to shipping channels, seaports and railways, a solid, modern and sustainable transportation infrastructure is compulsory to economic growth.

Yet there seems to be no long-term commitment to or mechanism by which to ensure that America's aging infrastructure is systematically improved and maintained.

This July, Congress passed a 10-month funding patch for the Highway Trust Fund, which was on the brink of insolvency, according to the Congressional Budget Office.

Rather than a patchwork of temporary fixes going forward, a long-term strategy is needed so that state and local governments have the fiscal foresight they need to plan and execute infrastructure upgrades and repairs.

Furthermore, we believe the eventual solution should also include measures to bring sustainable technologies to bear to mitigate the environmental impact of transportation – things like emissions, run-off from roadways and life-cycle-efficient construction.

CONCLUSION

Even considering the risks and challenges I mentioned, we believe the age of shale gas is here and here to stay.

North America, as the world's second largest chemical market and the world leader in innovation, has long been an important region for BASF.

The new cost advantages of shale gas, as a feedstock and an energy source, have added yet another dimension to this region's attractiveness as a cost-effective and fertile market for our products.

As evidenced by the capital projects I mentioned earlier, we see ample reason to invest here.

We see opportunities to innovate, to collaborate, to grow and to create the chemistry for a sustainable future here in North America.

As I said earlier creating chemistry is about more than molecules.

Creating chemistry is also about value-adding connections – connections that form a whole greater than the sum of its parts.

I'd like to again thank the Detroit Economic Club for this chance to create chemistry with you today.

And toward that end, I'm happy to take your questions.