

## *Invest for Growth*

Through a combination of product innovation and production efficiency SNF has over the years become the worldwide leader of the polyacrylamide market. The continuous improvement of production assets has always been central to ensure SNF's competitiveness. Since its inception, SNF has considerably improved its monomer and polymer production lines in order to decrease unit production costs:

- Acrylamide is produced through a bio-engineering process developed more than 25 years ago. The current 6<sup>th</sup> generation of bacteria has more than doubled the production efficiency of bio-acrylamide lines compared with the first generation. New lines have a capacity of 60 000 MT\*,
- The 4<sup>th</sup> generation dry polyacrylamide line has an average capacity of 25 000 MT compared with a capacity of 5 000 MT for the first generation. As a result, variable production costs (excluding raw materials) have been decreased by 60%,
- The 4<sup>th</sup> generation emulsion polyacrylamide lines use 50 m<sup>3</sup> reactors, versus 5 m<sup>3</sup> for the first generation, thus decreasing production costs by more than 50%.

SNF is currently facing accelerated growth in the different markets the company serves throughout the world. Generally speaking, this growth is driven by the increased scarcity of key natural resources: fresh water, minerals and oil & gas. In order to fulfill the expected growth in demand from existing and new customers, SNF has decided to step up its investment program for the next 3 years through the *Invest for Growth* initiative.

The *Invest for Growth* overall goal is to increase our global polyacrylamide capacity by about 100 000 MT (in active equivalent\*) per year for the next 3 years in order to reach **1 million MT** of capacity by the end of 2016. This initiative extends and amplifies for the next 3 years the investment program already initiated in 2013, which led to a capacity increase of 100 000 MT in 2013. The new powder lines in operation, under construction or under design for the 4 years covering 2013-2016 are the following:

### 2013

- - Taixing (China) : 2 new lines of 25 000 MT each
- - Plaquemine (USA) : 1 new line of 25 000 MT

### 2014

- - Taixing (China) : 1 new line of 25 000 MT
- - Andrézieux (France) : 1 new line of 25 000 MT
- - Ulsan (Korea) : 1 new line of 15 000 MT

### 2015

- - Taixing (China) : 1 new line of 25 000 MT
- - Riceboro (USA) : 1 new line of 15 000 MT
- - Plaquemine (USA) : 1 new line of 25 000 MT

### 2016

- - Rudong (China) : 1 new line of 25 000 MT
- - Saratov (Russia) : 1 new line of 25 000 MT

In addition, SNF will increase the production capacity in emulsion and liquid across all geographies. In particular, a new production site dedicated in a first phase to emulsion will be opened in 2015 in the UK at Teesside, with an initial capacity of commercial product of 60 000 MT (20 000 MT in active equivalent). Likewise, new emulsion lines for a total commercial capacity of 60 000 MT will be started in Plaquemine (USA) in 2014.

The following table summarizes the total existing and planned production capacity in polyacrylamide of the SNF group.

Capacity (MT active equivalent)	2013	2014	2015	2016
Powder	460 000	525 000	590 000	640 000
Emulsion and Liquid	250 000	285 000	325 000	360 000
<b>Total Capacity</b>	<b>710 000</b>	<b>810 000</b>	<b>915 000</b>	<b>1 000 000</b>
<i>Capacity increase</i>	<i>100 000</i>	<i>100 000</i>	<i>105 000</i>	<i>85 000</i>

Concerning monomer, SNF will keep increasing its bio-acrylamide capacity – currently 350 000 MT of pure product - to support the new polyacrylamide lines. In addition, a new line of cationic monomer is under construction in China, leading to a total capacity of cationic monomer of 250 000 MT at the end of 2014. Lastly, SNF is building a production unit of 15 000 MT for a functional monomer dedicated to temperature resistant polymers in Plaquemine.

While polyacrylamides represent the bulk of SNF activity, SNF is also investing to expand its production capacity in coagulants and specialty products. In particular, SNF in Taixing (China) is building new lines of 35 000 MT of polydadmac concurrent with a new line of 20 000 MT of dadmac monomer, and new lines of 12 000 MT of polyamine.

The capacity utilization of our existing polyacrylamide lines oscillates around 85%. Inclusive of the new lines regularly introduced, SNF has free capacity of more than 100 000 MT at any given time. Our strategy has always been to invest slightly ahead of the market in order to ensure that the needs of large customers, especially in energy, can be covered on very short notice. In addition, SNF has geographically diversified production assets, with at least two large plants per continent, thus ensuring safety of supply to customers.

Over the period 2014-2016, SNF expects to invest over 1 billion US dollars in capital expenditures for new site opening and capacity expansion.

Pascal Remy  
Chairman & CEO

## About SNF

SNF is the world's leading producer of polyacrylamide, a water soluble polymer used in water treatment, oil and gas applications including enhanced oil recovery and fracking, mineral extraction, pulp and paper manufacturing and other specialty industries. Our products and solutions contribute to conserving essential resources. SNF had sales of about €2 billion in 2013 and over 4,200 employees as of the end of the year.

Further information on SNF is available on the internet at [www.snf-group.com](http://www.snf-group.com).

\* Notes

MT = metric tonne

Active equivalent = 100% polymer content (ie powders are 100% active while emulsions are often at 35% active equivalent)