IVL - On Path to Long-Term Value

25th CLSA Investor’s Forum

September 13, 2018
Hong Kong
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Such forward-looking statements involve known and unknown risks, uncertainties and other important factors beyond the Company’s control that could cause the actual results, performance or achievements of the Company to be materially different from the future results, performance or achievements expressed or implied by such forward-looking statements. These forward-looking statements are based on numerous assumptions regarding the Company’s present and future business strategies and the environment in which the Company will operate in the future and are not a guarantee of future performance.
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Investment Highlights
Why Invest in IVL?

- **Growth driven by consumer-led industrial demand**
- **Global industry leadership**
- **Balanced portfolio between volume and value**
- **Well-defined roadmap for selective and accretive growth**
- **Proven track record of delivering high TSR**

Note: All numbers are core financials.
Leveraging Improved Performance and Earnings Growth Opportunities

+44%
Core LTM 2Q18 EBITDA growth driven by structural shifts in our industry

$923m
Operating Cash Flow strengthening balance sheet to fund growth plans

Solid 1H 2018 Performance
Strong industry fundamentals enhanced visibility of earnings

Strong projects and M&A pipeline to continue to add sustainable earnings growth
**Strong Demand Growth Outlook**

**PET: Safe, Convenient, Sustainable Material Choice**

- PET is 100% recyclable
- PET prolongs the shelf life and quality of the products and prevent wastage
- PET is safe and non-toxic since PET polymer is very stable and inert
- Lightweight PET save resources and also cuts costs & environmental impact during transportation
- PET reduces carbon footprint because it uses less energy, creates fewer GHG emissions and generates less solid waste

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**Source:** Industry Data, IVL Analysis

**Demand CAGR 2017-2019F**
Sustained Margin Environment

IVL vs Industry Spreads – Necessities Portfolio ($/t)

Note: Based on IVL portfolio
Note: 1Q16: Plant turnaround/catalyst change/ loss of production/Lower MEG margin; 1Q18: EG EBITDA adjusted by $21m for insurance claim
Source: IVL, Industry Data, IVL Analysis
## Favorable Demand/Supply Scenario

### Global PTA

- **Op. Rate**
  - 2013-2017: 77%
  - 2018-2022: 88%

<table>
<thead>
<tr>
<th>Year</th>
<th>New Capacity @ 85% Utilization (MMt)</th>
<th>New Demand (MMt)</th>
<th>Surplus/(Deficit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2017</td>
<td>18.8</td>
<td>13.5</td>
<td>5.3</td>
</tr>
<tr>
<td>2018-2022</td>
<td>10.9</td>
<td>23.3</td>
<td>(12.4)</td>
</tr>
</tbody>
</table>

### Global PET

- **Op. Rate**
  - 2013-2017: 78%
  - 2018-2022: 85%

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<thead>
<tr>
<th>Year</th>
<th>New Capacity @ 85% Utilization (MMt)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2013-2017</td>
<td></td>
<td></td>
<td>0.3</td>
</tr>
<tr>
<td>2018-2022</td>
<td></td>
<td></td>
<td>(3.5)</td>
</tr>
</tbody>
</table>

Source: Industry Data, IVL Analysis

- **Strong demand growth**
  - PET is 100% recyclable
- **Continued industry consolidation**
- **Limited access to capital**

*Note: Values are approximate and subject to market fluctuations.*
# 2019 Guidance Update

**EBITDA Outlook for 2019 Raised Up 74% Over 2017**

## 2017 to 2019 Core EBITDA ($M)

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>West Necessities</td>
<td>1,004</td>
<td>1,262</td>
<td>1,750</td>
<td>1,456</td>
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<tr>
<td>East Necessities</td>
<td>375</td>
<td>557</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HVA</td>
<td>536</td>
<td>540</td>
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## Key Metrics

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</thead>
<tbody>
<tr>
<td>Core EBITDA ($/MT)</td>
<td>110</td>
<td>132</td>
<td>134</td>
<td>123</td>
</tr>
<tr>
<td>Production (MMt)</td>
<td>9.1</td>
<td>9.6</td>
<td>13.0</td>
<td>11.9</td>
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</table>
### 2019 Margin Projections

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<tr>
<th>Core EBITDA ($/t)</th>
<th>LTM 2Q18</th>
<th>1H18</th>
<th>2019F</th>
<th>Rationale and Potential</th>
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<td><strong>West Necessities</strong></td>
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<tr>
<td></td>
<td>109¹</td>
<td>126¹</td>
<td>111</td>
<td>• LTM 2Q18 margins considered to be safe and sustainable</td>
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<td>• Repricing of 2019 contract sales can have positive impact</td>
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<td>• Ethylene integration, Brazil, Portugal Egypt will be positive</td>
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<td>• MEG margins difficult to foresee from their strong levels at present</td>
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<td>• Corpus Christi expected to be delayed into 2020</td>
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<td>• No impact from US ADD considered</td>
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<tr>
<td><strong>Asia Necessities</strong></td>
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<td></td>
<td>59</td>
<td>80</td>
<td>74</td>
<td>• Avg LTM 2Q18 – 1H18 margins considered</td>
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<td></td>
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<td>• India and Indonesia JV consolidation will be positive</td>
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<td></td>
<td>• Fiber expansion in Indonesia is positive</td>
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<td>• 1H18 Asia PTA margins considered sustainable</td>
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<td></td>
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<td></td>
<td></td>
<td>• 2Q18 Asia PET margins corrected to LTM 2Q18 level</td>
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<tr>
<td><strong>HVA</strong></td>
<td>284</td>
<td>271</td>
<td>268</td>
<td>• PEO, NDC, Packaging margins steady</td>
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<td></td>
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<td></td>
<td>• IPA margins lowered to sustainable level</td>
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<td>• HVA Fibers margins to expand post 1H18 supply issues</td>
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<td></td>
<td>• Avgol, Kordarna and PF expansion in China will enhance Hygiene and Auto business</td>
</tr>
<tr>
<td><strong>IVL</strong></td>
<td>130¹</td>
<td>142¹</td>
<td>134</td>
<td></td>
</tr>
</tbody>
</table>

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1. Adjusted for one-time income of $21m from insurance claim at IVOG in 1Q18

Note: 2019F Core EBITDA/t based on LTM 2Q18 margins and 2019 portfolio
**Attractive Growth Pipeline**

**2017**
- ✓ Acquisition of Glanzstoff (0.03 MMt)
- ✓ Acquisition of remaining interest in Trevira
- ✓ Completion of Rotterdam PTA expansion (0.3 MMt)
- ✓ Acquisition of Durafiber (0.06 MMt)
- ✓ Acquisition of Artlant PTA (0.7 MMt)
- ✓ First full year impact of BP Decatur and Cepsa Spain
- ✓ Debottlenecking projects

**2018**
- ✓ Performance Fibers expansion in China (0.03 MMt)
- ✓ Increased IPA production
- ✓ Contribution from Artlant PTA
  - Transition year for Glanzstoff and Durafiber
  - Transition year of Rotterdam PTA expansion
  - Commissioning of US Gas Cracker (0.44 MMt)
  - Start-up of Brazil and Egypt PET (1.1 MMt)
  - Debottlenecking projects

**2019**
- • First full year earnings impact of Glanzstoff, Durafiber, Avgol, Kordarna (0.4 MMt)
- • Necessities Fibers expansion in Indonesia (0.1 MMt)
- • Full year production from cracker
- • First full year impact of Artlant PTA
- • JV consolidation of PTA Indonesia (0.5 MMt)
- • Further increase in IPA production
- • Full year impact from Brazil, Egypt and India PET JV Consolidation
- • First full year financial impact from Performance Fibers expansion in China
- • Debottlenecking projects

✓ Completed

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**Integrated PTA-PET Corpus Christi plant (0.8MMt)**\(^1\) **expected to start-up in 2020**

**Awaiting regulatory approvals**

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1. IVL share of capacity
Note: Numbers in parenthesis represent capacity
IVL - Strong Fundamentals, Well Positioned for Future

2Q18 LTM Key Figures

>90% Domestic Sales
15,400 Employees
A global Presence in 29 countries
85 Operating Sites
11 R&D Centers

Revenue $9.3B
EBITDA $1.3B

Asia Necessities
West Necessities
Diversified Portfolio
Revenue 20%
EBITDA 13%

HVA

Diversified
Portfolio
Revenue $9.3B
EBITDA $1.3B

29%
23%
45%
EMEA
Americas
Asia

R&D Centers

11

Domestic Sales

44%
43%

32%
34%

20%
13%

43%
37%

32%
45%

85

15,400

29 countries
Expanding Our Leadership Positions Globally

1 in 4

PET bottles are made from IVL polymers

1 in 2

Premium baby diapers are made from IVL fibers

1 in 4

Tires are made from IVL fabrics

1 in 4

Airbags are made from IVL yarns

Source: Industry Data, IVL Analysis
Unique Value-Driven Growth Model

Global Diversification

Significant global reach and scale provides advantage

Vertical Integration

Balanced growth through organic and M&A strategy

HVA Portfolio

Track record of earnings accretive acquisitions and integration
Globally Diversified Portfolio

North America
- Capacity: 5.2 MMt
- #Countries: 3
- #Sites: 14

South America
- Capacity: 0.6 MMt
- #Countries: 1
- #Sites: 1

Europe
- Capacity: 3.5 MMt
- #Countries: 13
- #Sites: 20

Middle East & Africa
- Capacity: 1.1 MMt
- #Countries: 5
- #Sites: 7

Asia
- Capacity: 4.1 MMt
- #Countries: 7
- #Sites: 28

Legend:
- Legacy Assets (2012)
- Acquisitions (2013-2018YTD)
### The Power of Global Business Model

#### Production (MMt) vs EBITDA ($B)

<table>
<thead>
<tr>
<th>Year</th>
<th>Americas</th>
<th>EMEA</th>
<th>Asia</th>
<th>IVL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>12%</td>
<td>11%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>2013</td>
<td>10%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
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<tr>
<td>2014</td>
<td>12%</td>
<td>9%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>2015</td>
<td>14%</td>
<td>9%</td>
<td>5%</td>
<td>9%</td>
</tr>
<tr>
<td>2016</td>
<td>10%</td>
<td>13%</td>
<td>9%</td>
<td>9%</td>
</tr>
<tr>
<td>2017</td>
<td>12%</td>
<td>16%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>LTM 2Q18</td>
<td>17%</td>
<td>18%</td>
<td>12%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Note: Excluding Artlant PTA as it has started operating at end June 2018

#### ROCE

<table>
<thead>
<tr>
<th>Year</th>
<th>Americas</th>
<th>EMEA</th>
<th>Asia</th>
<th>IVL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>12%</td>
<td>11%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>2013</td>
<td>10%</td>
<td>4%</td>
<td>4%</td>
<td>4%</td>
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<tr>
<td>2014</td>
<td>12%</td>
<td>9%</td>
<td>4%</td>
<td>4%</td>
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<tr>
<td>2015</td>
<td>14%</td>
<td>9%</td>
<td>5%</td>
<td>9%</td>
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<tr>
<td>2016</td>
<td>10%</td>
<td>13%</td>
<td>9%</td>
<td>9%</td>
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<tr>
<td>2017</td>
<td>12%</td>
<td>16%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>LTM 2Q18</td>
<td>17%</td>
<td>18%</td>
<td>12%</td>
<td>12%</td>
</tr>
</tbody>
</table>

Note: Excluding Artlant PTA as it has started operating at end June 2018

#### EBITDA ($B)

<table>
<thead>
<tr>
<th>Year</th>
<th>Americas</th>
<th>EMEA</th>
<th>Asia</th>
<th>IVL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>5.3</td>
<td>0.5</td>
<td>0.5</td>
<td>0.5</td>
</tr>
<tr>
<td>2013</td>
<td>5.8</td>
<td>0.5</td>
<td>0.5</td>
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<tr>
<td>2014</td>
<td>6.2</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>2015</td>
<td>7.0</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
</tr>
<tr>
<td>2016</td>
<td>8.7</td>
<td>0.8</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>2017</td>
<td>9.1</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>LTM 2Q18</td>
<td>9.6</td>
<td>1.3</td>
<td>1.3</td>
<td>1.3</td>
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</table>

Note: Excluding Artlant PTA as it has started operating at end June 2018
### Advantaged Integration

**Unique Value Chain, Resilient to Downturns and Vital to Upswings**

<table>
<thead>
<tr>
<th>% Integration</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
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<tbody>
<tr>
<td>35%</td>
<td>2.8</td>
<td>2.9</td>
<td>3.4</td>
<td>3.9</td>
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<td>3.9</td>
<td>4.7</td>
</tr>
<tr>
<td>34%</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
</tr>
<tr>
<td>31%</td>
<td>0.1</td>
<td>0.1</td>
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<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
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<tr>
<td>34%</td>
<td>1.0</td>
<td>1.0</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.9</td>
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<tr>
<td>55%</td>
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<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
<td>0.3</td>
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<tr>
<td>58%</td>
<td>1.2</td>
<td>1.2</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.6</td>
<td>1.9</td>
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<tr>
<td>59%</td>
<td>2.0</td>
<td>2.0</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>2.1</td>
<td>3.4</td>
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<table>
<thead>
<tr>
<th>Year</th>
<th>PTA</th>
<th>MEG</th>
<th>PX</th>
<th>IPA</th>
<th>Ethylene</th>
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<td>2.8</td>
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<td>1.0</td>
<td>1.6</td>
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<td>2013</td>
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<td>0.3</td>
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<td>2014</td>
<td>3.4</td>
<td>0.3</td>
<td>1.6</td>
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<td>2015</td>
<td>3.9</td>
<td>0.3</td>
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<td>2016</td>
<td>3.9</td>
<td>0.3</td>
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<td>2017</td>
<td>3.9</td>
<td>0.3</td>
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<td>0.1</td>
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<td>2018</td>
<td>4.7</td>
<td>0.3</td>
<td>2.8</td>
<td>2.8</td>
<td>0.1</td>
</tr>
</tbody>
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**Polyester, PA66, Rayon**

**HVA Automotive**

**HVA Hygiene**

**Fibers**

**Ethylene**

**PTA**

**MEG**

**IPA**
**Integration as Source of Superior Performance**

- **Resilient Performance**
  - Reduced Earnings Volatility
  - Superior Asset Utilization

**EBITDA ($M)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Feedstock</th>
<th>PET</th>
<th>IVL PET</th>
<th>Industry PET</th>
<th>Fibers</th>
<th>IVL Core EBITDA/t</th>
<th>Industry PTA</th>
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<tbody>
<tr>
<td>2012</td>
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<td>LTMQ4</td>
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**EBITDA/($) YoY change of EBITDA/($)**

<table>
<thead>
<tr>
<th>Year</th>
<th>PET</th>
<th>Fibers</th>
<th>Feedstock</th>
<th>IVL</th>
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<tbody>
<tr>
<td>2012</td>
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<td>2013</td>
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</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTMQ4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Op. Rate (%)**

<table>
<thead>
<tr>
<th>Year</th>
<th>PET</th>
<th>Fibers</th>
<th>Feedstock</th>
<th>IVL</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LTMQ4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: WoodMac Chemicals, IVL Analysis
## High-Value Added Growth Platform

<table>
<thead>
<tr>
<th>HVA platform</th>
<th>Products</th>
<th>Demand CAGR 2018-21E</th>
</tr>
</thead>
</table>
| Automotive & Industrial | Airbag yarns  
Tire cord fabrics  
Industrial fabrics | >8% |
| Hygiene           | Baby diapers  
Feminine care  
Adult incontinence  
Medical disposable textiles | >7% |
| Specialty Polymers | Specialty PET  
Packaging | >6% |
| Chemicals         | IPA  
NDC  
EO | >6% |

871 KMT HVA volume

1,905 KMT HVA volume

2012

2Q18LTM
Creating Value with HVA

Production (MMt) | 5.25 | 5.80 | 6.23 | 7.02 | 8.73 | 9.10 | 9.56 | 11%
---|---|---|---|---|---|---|---|---
Necessities | 4.38 | 4.72 | 4.91 | 5.56 | 7.08 | 7.31 | 7.66 | 10%
HVA | 0.87 | 1.08 | 1.32 | 1.46 | 1.65 | 1.79 | 1.90 | 14%
Track Record of Earnings Accretive Acquisitions

<table>
<thead>
<tr>
<th>Production (MMt)</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>1H18 Annualized</th>
</tr>
</thead>
<tbody>
<tr>
<td>Legacy Assets</td>
<td>5.25</td>
<td>5.80</td>
<td>6.23</td>
<td>7.02</td>
<td>8.73</td>
<td>9.10</td>
<td>10.03</td>
</tr>
<tr>
<td>Acquisitions</td>
<td>0.11</td>
<td>0.73</td>
<td>2.33</td>
<td>2.71</td>
<td>3.21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROCE (%)</td>
<td>7.2%</td>
<td>6.4%</td>
<td>8.2%</td>
<td>9.7%</td>
<td>10.5%</td>
<td>11.9%</td>
<td>18.6%</td>
</tr>
</tbody>
</table>

| CAGR            |      |      |      |      |      |      |                 |
| Legacy Assets   | 11%  |      |      |      |      |      |                 |
| Acquisitions    | 4%   |      |      |      |      |      |                 |
A Stronger Balance Sheet with Prudent Growth
Credit Rating “AA-” by TRIS Thailand

Stronger Business Profile
2Q18 LTM OCF $0.9 B
Equity Boost
W1 - $0.5 B
W2 - $0.4 B

A Stronger Balance Sheet with Prudent Growth
Credit Rating “AA-” by TRIS Thailand

2Q18 LTM OCF $0.9 B
Equity Boost
W1 - $0.5 B
W2 - $0.4 B

Growth CAPEX
Maintenance CAPEX
Net Operating Debt/Equity(x)
Net Operating Debt/EBITDA(x)
Strong Commitment Towards ESG Leadership

- A member of 2017 DJSI Emerging Markets Chemicals Industry
- Ranked among Top 5 of all global chemical companies

RobecoSAM’s Sustainability Yearbook 2018
- Silver Class
- Industry Mover

Bloomberg
Leading in SET Index:
2017 Bloomberg ESG Disclosure Scores

2017 Climate Change Rating: B

Closed Loop Economy Initiative

A constituent of the 2018 FTSE4Good Index

EcoVadis
Gold Recognition:
Top 3% of suppliers in all categories
Leveraging Improved Performance and Earnings Growth Opportunities

+44% Core LTM 2Q18 EBITDA growth driven by structural shifts in our industry

$923m Operating Cash Flow strengthening balance sheet to fund growth plans

Solid 1H 2018 Performance
Strong industry fundamentals enhanced visibility of earnings

Strong projects and M&A pipeline to continue to add sustainable earnings growth
Thank You
IVL Portfolio
Indorama Ventures (IVL) at A Glance

Global #1 Thai Company with 85 sites in 29 countries and 5 continents

Global #1 Integrated PET producer with ~20% market share

Aiming to be a World-Class Chemical Company

**Necessities:**
- PET
- PTA
- Necessity Fibers
- MEG
- Ethylene & Propylene - (to start in 1H18)

**High Value Added:**
- Films
- Automotive
- Hygiene
- Industrial
- Packaging
- Specialty Chemicals (PEO, IPA, NDC etc.)

**EBITDA**
- US$ 1,262 Million
- 80%
- 57%
- 20%
- 43%

**Volumes**
- 80%
- 65.5%
- 34.5%
- 13.1%

**Shareholding Structure Jun’18**

- Promoters
- Domestic Institutions
- Retail
- Foreign Institutions (including NVDR 100%)

- Bloomberg Ticker : IVL.TB
- THB 451B ($13.6B) Enterprise Value Jun’18
- Listed in Thailand
- Avg. daily trading volume: ~28M shares
- Part of SET 50 and MSCI

Note: IVL LTM2Q18 financials, Core Financials on this slide and henceforth unless otherwise stated
IVL’s Unique Value Chain

Shale Gas or Oil

- Wood Pulp
- Benzene
- Butadiene
- Ammonia
- *Ethane/Propane Cracker
- *Ethylene
- *Propylene
- *Ethylene Gas

Polyester Fibers

- PEO
- Polypropylene (PP)
- ADA/ADN

Rayon Tire Cord

- HVA Rayon Fibers

Nylon 66 Fibers

- HVA Nylon 66 Fibers

PP Fibers

- HVA PP Fibers

PEO

- HVA PEO

Polyester Fibers

- HVA Polyester Fibers

PET

- PET Resin

Coatings

- PEN Film and others

Oil Refinery

- Paraxylene
- PTA
- Metaxylene
- MEG
- IPA
- NDC

Capacity Reservation

Note: * Ethylene Gas
Cracker of IVL is expected to start in 2018.

IVL Necessities Value Chain

IVL HVA Value Chain
IVL’s Necessities Portfolio

**Volume**
- **80%**
- #1 Global Producer
- Lowest Cost of Manufacturing in Indonesia

**Revenue**
- **63%**
- 100% Captive Integration
- 100% Captive Integration

**EBITDA**
- **57%**
- ~9 bn
- ...from 7 to 9 billion people by 2050
- 75%
- ...of the world population will live in the cities by 2050
- 30%
- ...more food needed by 2050

**Driven By Megatrends**

- Industry Growth ~5% p.a.
- Population Growth
- Rapid Urbanization
- Modern Retail Growth
- Health Awareness

Note: IVL LTM2Q18 financials, Captive integration is based on in-house raw material requirements

*H18
## IVL’s HVA Portfolio

<table>
<thead>
<tr>
<th>Volume</th>
<th>Revenue</th>
<th>EBITDA</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>37%</td>
<td>43%</td>
</tr>
</tbody>
</table>

### Capturing Emerging Trends

- **Automotive**
  - Light Weighting of Cars and Tires
  - Fuel Efficiency
  - > 8% *growth p.a.

- **Hygiene**
  - Lifestyle Changes & Aging Population
  - Performance
  - > 8% *growth p.a.

- **Industrial**
  - Preference and Sustainability
  - > 6% *growth p.a.

- **Specialty Polymers & Films**
  - IPA
  - NDC
  - PEO
  - > 6% *growth p.a.

- **Chemicals**
  - > 6% *growth p.a.

---

Note: IVL LTM2Q18 financials

* Industry growth
Conservative Financial Policy

Hedging

- Naturally hedging Forex position
- Substantially hedged with largely funding investments in the currency of operating cash flows
- 63% interest fixing for 1H2018 (2017: 50%)

Funding

- Diversification of funding sources and debt maturities to minimize refinance risk
- Interest cost reduction from cross currency swap
- Long term THB and SGD bonds: 51% (2017: 43%)
- Relationship with 7 domestic and 66 international banks
- Secured Debt to Total assets ~ 3% (~3% in 2017)

Tax optimization

- Optimization on current tax expenses for IVL for an amount of ~ THB 2.4 Billion in year 2018
- Additional savings expected with expected IVOL’s start up in Q’3 2018 and bonus depreciation rules as introduced in US Tax reforms kicking in.
- Saving of $100mn on Deferred Tax - new US tax policy
- Europe: Synergy in repatriation tax with European Headquarter

Consistently meet internal thresholds and debt agreements

<table>
<thead>
<tr>
<th>Bond and bank debt covenant</th>
<th>Not more than 2.0x</th>
</tr>
</thead>
<tbody>
<tr>
<td>Board Guidance</td>
<td>Not more than 1.5x</td>
</tr>
</tbody>
</table>

Net Debt / Equity (x)

<table>
<thead>
<tr>
<th></th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2Q18</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>1.31</td>
<td>0.84</td>
<td>0.96</td>
<td>1.06</td>
<td>0.70</td>
<td>0.64</td>
</tr>
</tbody>
</table>
Natural Hedges Reduce Currency Exposure

Long Term (Jun 2018)

<table>
<thead>
<tr>
<th>Currency</th>
<th>Long Term Debt</th>
<th>Fixed Capital Employed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Others</td>
<td>2%</td>
<td>10%</td>
</tr>
<tr>
<td>THB</td>
<td>49%</td>
<td>23%</td>
</tr>
<tr>
<td>EUR</td>
<td>15%</td>
<td>23%</td>
</tr>
<tr>
<td>USD</td>
<td>35%</td>
<td>44%</td>
</tr>
</tbody>
</table>

Net Working Capital
US$ 1.25B

Short Term (Jun 2018)

<table>
<thead>
<tr>
<th>Paper Hedges</th>
<th>Open Exposure to Currency Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>21%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Natural Hedge

87% Net Working Capital
US$ 1.25B

FX Impact to P&L

<table>
<thead>
<tr>
<th>Year</th>
<th>Forex Gain/Loss ($M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>11.6</td>
</tr>
<tr>
<td>2015</td>
<td>1.4</td>
</tr>
<tr>
<td>2016</td>
<td>15.4</td>
</tr>
<tr>
<td>2017</td>
<td>(1.0)</td>
</tr>
<tr>
<td>1H18</td>
<td>17.9</td>
</tr>
</tbody>
</table>
2Q 2018 Update
2Q 2018 Summary

2Q18 Core EBITDA up 63% YoY, 1H18 up 56%

Driven by positive internal and external outcomes

LTM 2Q18 Core EPS THB 3.86 – up 61% YoY post 9.8% dilution from warrants exercise

Net Operating D/E 0.45x, Core ROCE 15.8% on LTM 2Q18 basis

Attractive and accretive production pipeline heading into 2019
1H 2018 Year-on-Year Reported Financial Highlights

- **Production**: 4.9MMt, +10% YoY
- **Reported EBITDA**: $742M, +57% YoY
- **Reported Net Profit**: $443M, +109% YoY
- **Operating Cash Flow**: $489M, +1% YoY
- **Core EPS per diluted share**: THB 2.30, +68% YoY
2Q 2018 Results – IVL

- **Strong demand growth** led by Asia supporting enhanced margins in the Polyester Value Chain

- **IVL benefits from integrated PET platform globally**, HVA has mixed results – gains in PEO and Packaging offset by negative lag in HVA fibers and normalizing IPA margins

- **Portfolio enhanced and well positioned for 2H18 – 2019** with USA Cracker, Rotterdam-Portugal-Indonesia PTA, Brazil-Egypt-India PET JV consolidation as well as Avgol and Kordarna synergies in HVA

---

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>2Q18 LTM</th>
<th>2Q17 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core ROCE (%)</td>
<td>20.4%</td>
<td>12.6%</td>
<td>15.8%</td>
<td>11.2%</td>
</tr>
<tr>
<td>Core EBITDA ($/t)</td>
<td>153</td>
<td>107</td>
<td>132</td>
<td>97</td>
</tr>
<tr>
<td>Core EBITDA Margin</td>
<td>14.8%</td>
<td>11.4%</td>
<td>13.5%</td>
<td>11.2%</td>
</tr>
</tbody>
</table>

1. After PERP Interest
**2Q 2018 Results – West Necessities**

**West Necessities Core EBITDA ($M)**

- **West PET business** delivers strong growth in production and earnings year-on-year on **higher operating rates and increased margins** on spot volume, driven by Asia and regional supply disruptions.

- **West Feedstock** in 2Q18 benefits from **strong EG margins** and recovering sales of PTA in North America, partially offset by strong secondary raw materials costs.

- Recent addition of 1.1 million tons of PET capacity in **Brazil and Egypt** and another 1.1 million tons of PTA via **Rotterdam** expansion and **Portugal**, to **contribute fully in the following quarters**.

**Note:** West Necessities include West PET, West Feedstock and West Fibers.

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>2Q18 LTM</th>
<th>2Q17 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core EBITDA ($/t)</td>
<td>134</td>
<td>65</td>
<td>113</td>
<td>67</td>
</tr>
<tr>
<td>Core EBITDA Margin</td>
<td><strong>15.3%</strong></td>
<td>7.7%</td>
<td><strong>13.8%</strong></td>
<td>8.9%</td>
</tr>
</tbody>
</table>

**2Q18** vs **2Q17**

- **2Q18 Core EBITDA ($M)**: 176 (vs 72)
- **2Q18 Core EBITDA Margin**: 15.3% (vs 7.7%)
- **2Q18 LTM Core EBITDA ($/t)**: 113 (vs 67)
- **2Q18 LTM Core EBITDA Margin**: 13.8% (vs 8.9%)
2Q 2018 Results – East Necessities

East Necessities Core EBITDA ($M)

- **Asia PET** business delivers strong earnings growth year-on-year supported by **high utilization rates**, driven by global demand and structural improvements.

- **Strong recovery in Asia PTA earnings** driven by improving industry structure and higher operating rates, partly offset by high secondary raw material costs.

- **Asia Fibers** business delivers improved performance and is poised for new output from Indonesian expansion in 2H18.

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>2Q18 LTM</th>
<th>2Q17 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core EBITDA ($/t)</td>
<td>102</td>
<td>40</td>
<td>59</td>
<td>37</td>
</tr>
<tr>
<td>Core EBITDA Margin</td>
<td>14.2%</td>
<td>6.8%</td>
<td>8.5%</td>
<td>6.2%</td>
</tr>
</tbody>
</table>

Note: East Necessities include Asia PET, Asia PTA and Asia Fibers.
2Q 2018 Results - HVA

Core HVA EBITDA ($M)

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>2Q18 LTM</th>
<th>2Q17 LTM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core EBITDA ($/t)</td>
<td>266</td>
<td>317</td>
<td>283</td>
<td>262</td>
</tr>
<tr>
<td>Core EBITDA Margin</td>
<td>14.4%</td>
<td>18.5%</td>
<td>15.8%</td>
<td>16.4%</td>
</tr>
</tbody>
</table>

Note: HVA includes Fibers HVA, Feedstock HVA, PET HVA

- **Fibers HVA** business impacted by slow Durafiber integration, force majeure and unfavorable raw material price lag, which is expected to be recovered in following quarters.

- **Feedstock HVA** business supported by strong PEO margins and increase in IPA volumes offsetting normalizing IPA spreads.

- **HVA business** to benefit from additional volume from Avgol, Kordarna and Medco in the quarters to come.
Increasing contribution from Necessities portfolio reflects ongoing structural change

Note: Total of all segments and portfolio may not match to IVL due to holding
## Enhancing Visibility on Earnings

### Asia

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>1H18</th>
<th>1H17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (MMt)</td>
<td>0.85</td>
<td>0.79</td>
<td>1.64</td>
<td>1.55</td>
</tr>
<tr>
<td>Core EBITDA ($m)</td>
<td>112</td>
<td>56</td>
<td>180</td>
<td>101</td>
</tr>
<tr>
<td>Core EBITDA/t</td>
<td>133</td>
<td>71</td>
<td>110</td>
<td>65</td>
</tr>
</tbody>
</table>

### EMEA

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>1H18</th>
<th>1H17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (MMt)</td>
<td>0.76</td>
<td>0.60</td>
<td>1.46</td>
<td>1.24</td>
</tr>
<tr>
<td>Core EBITDA ($m)</td>
<td>111</td>
<td>87</td>
<td>207</td>
<td>156</td>
</tr>
<tr>
<td>Core EBITDA/t</td>
<td>145</td>
<td>145</td>
<td>142</td>
<td>126</td>
</tr>
</tbody>
</table>

### Americas

<table>
<thead>
<tr>
<th></th>
<th>2Q18</th>
<th>2Q17</th>
<th>1H18</th>
<th>1H17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (MMt)</td>
<td>0.94</td>
<td>0.84</td>
<td>1.77</td>
<td>1.63</td>
</tr>
<tr>
<td>Core EBITDA ($m)</td>
<td>166</td>
<td>96</td>
<td>328</td>
<td>201</td>
</tr>
<tr>
<td>Core EBITDA/t</td>
<td>177</td>
<td>114</td>
<td>185</td>
<td>123</td>
</tr>
</tbody>
</table>

### Key Metrics

- **Core EBITDA/t ($)**: $147, $104
- **Core EBITDA Margin**: 14.2%, 11.1%
- **Core ROCE**: 18.6%, 10.7%

### Notes

- Asia PTA margins recovery while PET outperforms

---

43
### Acquisitions Announced Till Date

<table>
<thead>
<tr>
<th>Business</th>
<th>Region</th>
<th>Status</th>
<th>Capacity</th>
<th>Strategic Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brazil PET</strong></td>
<td>West PET</td>
<td>Brazil</td>
<td>Signed: Mar 16, 2018 &lt;br&gt;Closed: May 24, 2018</td>
<td>550 KMT</td>
</tr>
<tr>
<td><strong>Egypt PET</strong></td>
<td>West PET</td>
<td>Egypt</td>
<td>Signed: Jun 14, 2018 &lt;br&gt;Closed: Jun 14, 2018</td>
<td>540 KMT</td>
</tr>
<tr>
<td><strong>Avgol</strong></td>
<td>Fibers HVA</td>
<td>Israel, USA, China, Russia and India</td>
<td>Signed: May 13, 2018 &lt;br&gt;Closed: July 25, 2018</td>
<td>203 KMT</td>
</tr>
<tr>
<td><strong>Kordarna</strong></td>
<td>Fibers HVA</td>
<td>Czech R. and Slovakia</td>
<td>Signed: Jun 28, 2018 &lt;br&gt;Closing: 3Q18E</td>
<td>Fabrics: 50 KMT &lt;br&gt;Fibers: 21 KMT</td>
</tr>
<tr>
<td><strong>Medco</strong></td>
<td>Packaging</td>
<td>Egypt</td>
<td>Signed: Jul 18, 2018 &lt;br&gt;Closing: 3Q18E</td>
<td>Preforms: 70 KMT</td>
</tr>
<tr>
<td><strong>Sorepla</strong></td>
<td>Recycle</td>
<td>France</td>
<td>Signed: Jul 31, 2018 &lt;br&gt;Closed: Jul 31, 2018</td>
<td>52 KMT</td>
</tr>
</tbody>
</table>

✓ Closed
Industry Outlook
China capacity coming back to balance

China has been able to build and back integrate unlike some producers in the West

Exports have mainly been to the Middle East, India and not to the West

Improving margins

2018 sees a surge in PTA use as it looks to substitute some virgin for recycle

Large captive investments into refinery will require margin discipline to recover capex costs

Source: Industry Data, IVL Analysis
PX Industry Outlook

- China expected to be long on PX due to new supply additions
- Current improvements in PTA margin reflective of the need for cash flow to fund the upcoming mega projects
- Recover upstream capex through downstream margin
- IVL sees a potential upside to its margins - not yet built into the forecast - with melt costs going down on account of discounts on raw materials and higher downstream prices

Source: Industry Data, IVL Analysis