Asset Solutions Americas
December 2018

Robin Watson – Chief Executive, Wood
David Kemp – CFO, Wood
Andrew Stewart – CEO of ASA
Kent McAllister – President Capital Projects, ASA
Asset Solutions: support across the asset life cycle

**Capital Projects (Capex driven)**
- Engineering
- Project management
- EPC/EPCM projects
- Construction and field services

**Operations Solutions (Opex driven)**
- Operations
- Maintenance
- Modifications
- Industrial services
- Commissioning
- Decommissioning
### Asset Solutions: the core business in our delivery model

<table>
<thead>
<tr>
<th>Reportable Segments</th>
<th>Asset Solutions Americas (c35% of Revenue*)</th>
<th>Asset Solutions EAAA (c35% of Revenue*)</th>
<th>Specialist Technical Solutions (c15% of Revenue*)</th>
<th>Environment &amp; Infrastructure Solutions (c12% of Revenue*)</th>
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<tbody>
<tr>
<td>Capital Projects</td>
<td>Operations Services</td>
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<td>Upstream &amp; midstream</td>
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<td>Decommissioning Services</td>
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* Based on H1 2018 revenue
ASA: Strong operational platform with multi sector capability

Balance of exposure in Oil & Gas across Upstream, Midstream, Downstream & Chemicals

Strong offering across Power and Industrial end markets
ASA underpins Wood’s key investment themes

- Broad sector exposure; lower volatility
- Leading & differentiated position in oil & gas
- Balanced across opex and capex spending

- Flexible, asset light business model
- Commercially versatile with a measured risk appetite
- Blue chip customer base with OECD weighting
- Strong cash generation
Strong and experienced management team

**Andrew Stewart** | CEO Asset Solutions Americas

- BE Hons in Mechanical Engineering, University of Melbourne
- MBA, Melbourne Business School
- Previously led Wood’s brownfield production services business in Australia & Asia Pacific. Prior president of construction, maintenance and operations for the United States, Canada, Latin America and the Caribbean
- Ten year career with Wood
- Awarded Houston Business Journal’s Most Admired CEO in 2018

**Kent McAllister** | President Capital Projects, Asset Solutions Americas

- BS Chemical Engineering from the University of Arkansas
- 25 years experience in deep water production facility design and business leadership
- Previously led Wood Group’s offshore global operations group. Prior president of the offshore business in the United States
- 20 year career with Wood
ASA : who we are and what we do

- Life cycle services supporting assets from concept through to operation
- **Capital Projects:** Adding value to capital investment from concept to start-up through delivery of predictable project outcomes
- **Operations Solutions:** Increasing production, improving efficiency, reducing cost and extending asset life
- Operating across a diversified range of markets; oil & gas, power and industrial
- Commercially versatile with flexible delivery model
ASA at a glance

Revenue* by Sector

- Upstream: 33%
- Midstream: 24%
- Downstream/chemicals: 13%
- Power & industrial: 30%

Top 20 Customers by type

- Independent O&G: 58%
- Energy/industrial/chemical: 23%
- IOC: 16%
- NOC: 3%

Headcount: c18,000**

- White collar: 60%
- Blue collar/craft: 40%

* Revenue refers to 2017 Total Revenue
** Headcount as at 31 October 2018
Good recovery into 2018 driven by US shale and downstream & chemicals activity

Maintained market share in offshore greenfield engineering; challenging conditions in operations solutions

H1 2018 margin guidance: c5.5% - 6.0% supported by cost synergy delivery

Growth in US shale expected to continue near term
Order book and revenue synergies

Order Book

- Reflects short cycle nature of contracts
- Predominantly reimbursable/ lower risk fixed price
- Lump sum work reflects increase in downstream/chemicals, power & shale activity

Revenue synergies

- Over $200m revenue synergies secured
- Opportunities driven by:
  - Scale
  - Breadth of services
  - Self performance capability
Enduring customer relationships

Major customers by length of relationship

<table>
<thead>
<tr>
<th>Category</th>
<th>5 years</th>
<th>15 years</th>
<th>22 years</th>
<th>25 years</th>
<th>30 years</th>
<th>55 years</th>
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<tr>
<td>Power &amp; Industrial</td>
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<td>Upstream</td>
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<td>Upstream &amp; Midstream</td>
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Top 10 customers account for c30% of revenue
### Market leader in Upstream Capital Projects:

- Ranked #1 in Top Firms for Offshore facilities
  
  [Source: Engineering News Record]
- Designed 30 of 52 floater topsides in GoM
- Designed more compliant piled towers than any other company in the world

### Largest offshore Operations Solutions provider:

- Delivering Operations Solutions on 40% of GoM platforms
- Supporting c75% of clients in the GoM deepwater market

### Predominant player in shale facilities & midstream:

- Only company with presence in every shale basin
- Largest and most vertically integrated pipeline project offering in North America

### Ranked #10 in Power & #5 in Solar Power

[Source: ENR’s 2018 Top 400 Contractors]

### Significant presence in downstream:

Delivered $3bn downstream projects along the Gulf Coast over 5 years
## Competitive landscape

<table>
<thead>
<tr>
<th></th>
<th>Wood ASA</th>
<th>Jacobs</th>
<th>Worley Parsons</th>
<th>Fluor</th>
<th>McDermott</th>
<th>Technip FMC</th>
<th>KBR</th>
<th>Aker</th>
<th>Others</th>
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<td><strong>Midstream shale</strong></td>
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<td><strong>Operations Solutions</strong></td>
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- **Full capability**
- **Partial capability**

Jacobs & Worley Parsons shown pre-disposal of Jacobs’ ECR business to Worley Parsons
Why choose us

• **Unmatched capability set and track record:**
  – Breadth and depth of asset services
  – Long track record of safe, successful delivery

• **Aligned with customer needs:**
  – Focused on cost effective & scalable delivery models
  – Innovative, technology enabled solutions

• **Unrivalled technical know-how:**
  – Providing solutions for some of the world’s most complex projects
Capital Projects – full service capability

- Facilities studies
- FEED
- Detailed engineering and design
- Brownfield engineering & modifications

- Purchasing
- Expediting and logistical support
- Quality control
- Cost control

- Safety
- Qualification / Evaluation of Contractors
- Site Management
- Quality Control

- Hook up
- Commissioning management and execution
- Project certification management
- HSE management
- Punch lists
- Logistics / material

- Scheduling
- Cost Estimating
- Cost Control
- Document Control
Industry leader in the design, engineering & project management of upstream facilities

Key strengths:
- Conceptual development
- Front-end engineering design (FEED)
- Detailed design
- Follow-on engineering services
- Project management & procurement
- Brownfield facility upgrades

Specialisms:
- Fixed offshore platform jackets & topsides
- Floating production systems lightweight topsides
- Subsea production & riser systems
- Offshore platform-based LNG facilities
- Innovative onshore well pad designs
- CO2/EOR
Capital Projects – Upstream

**Noble Energy**
Leviathan offshore platform

FEED, detailed design, procurement, project management for fixed production platform and jacket

**Equinor**
Peregrino II wellhead platform, offshore Brazil

FEED, detailed design, procurement, project management for wellhead platform

**Suncor**
Firebag well pad program, Alberta, Canada

Proprietary, standardized Wood SAGD design well pad design

- **Extended Operations Solutions relationship into Capital Projects**
- **75%** cost improvements
- **90%** reduction in engineering hours
- **70%** reduction in construction hours

**42 months**
to first gas from start of FEED
Self performed construction capability and industry leading pipeline services

Key strengths:
• Complete pipeline field services
• Compression and pumping facilities
• Enhanced oil recovery (EOR)
• Construction & construction management
• Measurement, pigging and storage facilities

Specialisms:
• Oil, gas, condensate & LPG/NGL processing
• Pipeline engineering
• Compressor, pump & metering stations
• Field services
## Capital Projects – Midstream

<table>
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<tr>
<th>Project/Region</th>
<th>Description</th>
<th>Details</th>
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</table>
Mentone Gas Plant Project, Permian, Texas, US | 
Construction of two gas trains, two amine filtration units, high pressure stabilizers & inlet catcher |
| Great Western Oil & Gas | 
Raindance Pipeline Construction, Colorado, US | 
Engineering, design, construction and construction management for 60+ oil and natural gas pipelines |
| Trans-basin Pipeline Engineering & Design, US | | 
Engineering, design and permitting services for a large crude oil pipeline in North America |

- **6** Wood service lines involved in execution
- **Delivered 60** pipelines over **45 miles**
- **870** mile pipeline connecting Permian & Eagle Ford to refinery terminals
US Shale

- Civils, Construction, Fabrication, Pipeline facilities & operations
- Strong top line growth
- Current focus on pipeline and infrastructure project management and construction
- Permian is largest footprint
- Driver is midstream projects not rig count
- Capacity constraints are driving growth
- Revenue up c40% in 2018
Applying **technical innovation** to successfully deliver some of the world’s most **complex** facilities

**Key strengths:**

- Proprietary technology enabled; delayed coking, hydrogen & sulfur recovery
- Petrochemicals
- Utilities, infrastructure & offsites development
- Field construction support facility

**Specialisms:**

- Technology provider
- Consultancy services
- Front end design
- Engineering, procurement, construction
- Fabrication
- Professional Technical Manpower
World scale chemical complex covering 1,300 acres

Yuhuang Chemical Inc (YCI)
M1 Methanol Plant, Louisiana, USA

Full EPC services for the construction of onshore methanol plant

Delivers:
- Improved quality
- Reduced risk
- Reduced cost

Field Construction Support Facility
Clute, Texas, USA

Self performing fabrication facility for carbon, stainless & alloys

World-scale Olefins Complex, Texas, USA

Reimbursable EPC for key infrastructure facilities for a world-class olefins facility

1,100+ employees at peak construction
Capital Projects – Power & Industrials

Specialised services focused on reducing risk in large scale conventional power, renewable energy and industrial projects

Key strengths:
• Design and build capability
• Solar, wind, fossil fuel, industrial process
• Self performed construction capability

Specialisms:
• Engineering, procurement, construction
• Project & construction management
• Safety & Environmental
• Operator training
• Commissioning & start up
• Plant outage
Capital Projects – Power & Industrials

**Sempra US Gas & Power**  
Copper Mountain, Nevada

- EPC contract to install multi-crystalline silicone solar panels

**INEOS**  
Olefins & Polymers Chocolate  
Bayou Works, Alvin, TX

- Full EPC services to deliver a cogeneration project

**Veramaris (Evonik & DSM JV)**  
Green Ocean Blair, NE

- EPCM services to design and construct a fermentation facility to produce Omega 3 fatty acids

**1,500,000 Solar panels installed; one of the world’s largest solar projects**

**Delivering:**
- cost efficiencies
- improved carbon footprint
- Increased steam capacity

**First of its kind production facility in terms of scale**
# Operations solutions

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<thead>
<tr>
<th>Operations &amp; maintenance</th>
<th>Modifications</th>
<th>Industrial services</th>
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</thead>
<tbody>
<tr>
<td>• Operations</td>
<td>• Engineering &amp; fabrication</td>
<td>• Protective coatings &amp; insulation</td>
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<tr>
<td>• Inspection &amp; maintenance</td>
<td>• Construction management</td>
<td>• Scaffolding &amp; rope access</td>
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<tr>
<td>• Logistics</td>
<td>• Commissioning</td>
<td>• Passive fire protection</td>
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<tr>
<td>• Manpower services</td>
<td>• Work planning</td>
<td>• Electrical, instrumentation &amp; cabling</td>
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<tr>
<td>• Integrity strategies &amp; management</td>
<td>• Project reporting</td>
<td>• Heat treatment</td>
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<td>• Supervision &amp; management</td>
<td>• Repair orders</td>
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<td>• Shutdown &amp; turnaround</td>
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<td>• Due diligence</td>
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Operations Solutions

ExxonMobil / HMDC
Hibernia Platform, St. Johns, Newfoundland, Canada

21 years of continuous services on Hibernia across the asset lifecycle

Offshore operations & maintenance

Carbon Creek Energy
Coal Bed Methane Asset Management, Wyoming, USA

Onshore operations & maintenance & asset management

15% Reduction in operating costs

150% Increase in equipment run time

Hess
Stampede, offshore Gulf of Mexico, USA

Full lifecycle solutions from offshore design to operations services

Continuity of services from engineering to Operations Solutions
# Medium term outlook – Asset Solutions Americas

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<tr>
<th>Markets</th>
<th>Position / outlook</th>
<th>Rating</th>
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<tr>
<td>Oil &amp; Gas</td>
<td><strong>Upstream - offshore</strong></td>
<td>🔄 ▶️</td>
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<tr>
<td></td>
<td>• Discipline in customer spending &amp; focus on supply chain efficiency</td>
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<td>• Scope for additional brownfield work in GoM &amp; Brazil emerging</td>
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<td>• Gulf coast export terminals opportunities in the medium term</td>
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<tr>
<td>Oil &amp; Gas</td>
<td><strong>Upstream - onshore</strong></td>
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<tr>
<td></td>
<td>• Steady growth in shale markets in the near term</td>
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<td></td>
<td>• North American crude and NGL production expected to improve</td>
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<td>Oil &amp; Gas</td>
<td><strong>Midstream</strong></td>
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<tr>
<td></td>
<td>• Positive medium term outlook as shale activity continues to grow</td>
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<td>• Expected to taper with the flattening of shale production</td>
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<td>Downstream/chemicals</td>
<td>• Continued investments in our core markets anticipated</td>
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<tr>
<td></td>
<td>• Supply of low cost feedstocks driving demand</td>
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<td></td>
<td>• Clean fuels regulation (MARPOL) generating additional investment in refining</td>
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<tr>
<td>Power</td>
<td>• Anticipate solar and wind capacity additions</td>
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<td>• Natural gas-fired power generation project volumes expected to decline</td>
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<td>• Coal retirement projects expected to decline as number of coal fired plants reduce</td>
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<td>Industrial</td>
<td>• Strong economy and low interest rates stimulating capital investment</td>
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<tr>
<td></td>
<td>• Interest rates are expected to continue to rise</td>
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• Broad and deep capability across the asset life cycle
• Differentiated by innovative & efficient solutions, strong technical capability & track record of safe & successful delivery
• Leading positions in upstream, midstream, downstream & chemicals, power & industrial
• Enduring relationships across a broad blue chip customer base
• Strong organic growth in 2018