**Research Report** 

**SECTOR: URANIUM** 

## **COMPANY UPDATE**

Friday, 25 February 2011

# Black Range Minerals | BLR

# RESTRICTED

Last Price	A\$	0.072
52 week hi/low	A\$	0.022/0.091
Market cap	A\$m	53.58
Cash	A\$m	4.99
Debt	A\$m	0.00
Enterprise Value	A\$m	48.59
Shares on issue (undiluted)	m	640.99
Options	m	103.19
Shares on issue (fully diluted)	m	744.13
Price Target	A\$	Restricted
Valuation	A\$	Restricted
EV/Resource	A\$/t	0.80

# ADVANCING URANIUM PROJECTS' IN THE USA

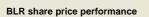
Black Range Minerals Limited (BLR) is an Australian based explorer focused on the exploration and development of uranium assets in the USA.

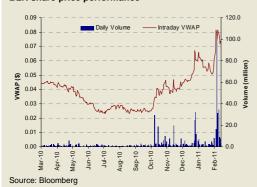
#### Key Points

- Exclusive option secured: on the 21<sup>st</sup> of February 2011, BLR secured an exclusive option to acquire a 100% interest in the Hansen Uranium Project, which is located immediately adjacent to the 100% owned Taylor Ranch Uranium Project.
- Potential resource increase: the Taylor Ranch Uranium Project contains a JORC resource of 60.2mlbs of U3O8 (with an average grade of 0.057% (or 570ppm) U3O8) while the Hansen Project contains a non-JORC mineralised inventory of 30.0mlbs of U3O8 (with an average grade of 0.06-0.08% (or 600-800ppm) U3O8). This has essentially raised the total size of the potential resource to circa 90mlbs U3O8.
- Close proximity to licensed uranium mills: BLR's Taylor Ranch / Hansen Project is located within close proximity (approx 35km) to one of only four licensed uranium mills in operation in the USA, Canyon City, Colorado. The relevant regulatory bodies are receptive to uranium mining and processing within that state. This is further supported by the recent approval (5th January 2011) by the Colorado Department of Public Health and Environment (Department) for a Radioactive Materials license for the Pinon Ridge uranium mill to be built in western Montrose County, Colorado.
- Board Experience: The Board and management team have credible experience in geology and international mining through Managing Director Michael Haynes and Non-Executive chairman Alan Scott.
- Options to expire in February 2011: BLR has approximately 97.4m options with an exercise price of A\$0.045 per share which are due to expire on 28 February 2011. StoneBridge has been appointed as Underwriter of these options.

#### **Investment View**

BLR has approximately A\$5m in cash and will raise a further A\$4.38m with the exercise of the 97.4m options on 28 February 2011. These funds will be used to finalise a JORC resource at Hansen, complete additional diamond drill holes, update historical feasibility studies and continue base line environmental studies for mine permitting and regulatory approvals. We believe that BLR is well placed to ultimately secure approvals and move towards development of the Taylor Ranch / Hansen Uranium Project. StoneBridge expects this Project to come online in FY2014.





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# **Company Overview**

# Background

**Black Range Minerals (BLR)** is an ASX listed company focused on the exploration and development of uranium projects in the USA.

The company is in the process of consolidating ownership of uranium assets within the Tallahassee Creek District of Colorado USA. BLR holds 100% interest in the Taylor Ranch Uranium Project and has recently secured an exclusive option to acquire a 100% interest in the Hansen Uranium Deposit (which is located immediately adjacent to the Taylor Ranch Uranium Project). Prior to the execution of an agreement less than one week ago, BLR had an exclusive option to acquire a 49% interest in the Hansen Deposit.

The terms to acquire 100% of the Hansen Deposit are outlined below:

- To acquire 49%:
  - US \$1m cash and US \$1m in shares on the execution of an agreement to acquire the 51% interest.
  - US \$2m cash and US\$2m in shares on commencement of commercial scale production.
- To acquire 51%:
  - US \$1m in cash and US\$2.5m in shares on execution of agreement.
  - 6-year option with US\$1m in cash and US\$1m in shares payable after 3 years to extend the option a further 3 years.
  - US \$2m in cash and US\$7.5m in shares to exercise the option.

# **History**

The Hansen Uranium Deposit was discovered in 1977. It is a large sandstone-type uranium deposit that is approximately 1400 metres long and 500 metres wide, within an Eocene aged palaeovalley. To date, approximately 1,000 holes have been drilled to define the deposit which comprises approximately 15-20 Mt at a grade of 0.06-0.08%  $U_3O_8$  for circa 30 million pounds of  $U_3O_8$ .

A bankable feasibility study into the development of the deposit was completed in 1981, with a planned open cut operation followed by underground mining. The planned mining rate was approximately 1Mt (or ~2 million pounds of  $U_3O_8$ ) per annum with estimated metallurgical recoveries of +95% anticipated by using conventional acid leach processing. All permits were in place to commence mining, and to build a processing facility on the Taylor Ranch property, just as the uranium market collapsed in 1982. As a result, mining never eventuated.

Combining the Taylor Ranch and Hansen Uranium Deposit will create one of the largest uranium resources in the USA.



# Summary of Projects

A summary of BLR's projects is outlined below:

- Taylor Ranch / Hansen Uranium Project: comprises:
  - a) Taylor Ranch Uranium Project, Colorado USA (100%)
    - $\circ~$  Contains a JORC compliant resource of 47.81mt and 0.057%  $U_3O_8$  for 60.2 million pounds (mlbs) of  $U_3O_8.$

#### b) Hansen Uranium Project, Colorado USA (option to acquire 100%)

- o BLR recently acquired exclusive rights to secure 100% interest in the project..
- The deposit contains a non-JORC mineralised inventory of 15-20mt with an average grade of 0.06-0.08%  $U_3O_8$  for approximately 30mlbs  $U_3O_8$ .
- A bankable feasibility study was completed and all permits for mining had been approved in the early 1980's.

#### Keota Uranium Project, Colorado USA (100%)

- o BLR holds mineral rights on three properties covering approximately 2,750 acres.
- Mineralisation at the Keota Uranium Project is relatively shallow, high grade and potentially amenable to open cut or in-situ recovery mining.
- $_{\odot}$  Historical drill data shows some encouraging results including 3.0m at 0.17%  $U_{3}O_{8}$  and 3.1m at 0.13%  $U_{3}O_{8}.$

#### Jonesville Coal Project, Alaska USA (100%)

- The project contains the historic Evan Jones Coal Mine, which is located approximately 100km northeast of Anchorage USA and is readily accessible by road and rail.
- The structure of the coal seams comprises both surface outcrops with open cut potential and underground seams with a maximum depth of 800m.
- o 50% of the resources are hosted by seams that dip at greater than 20 degrees.



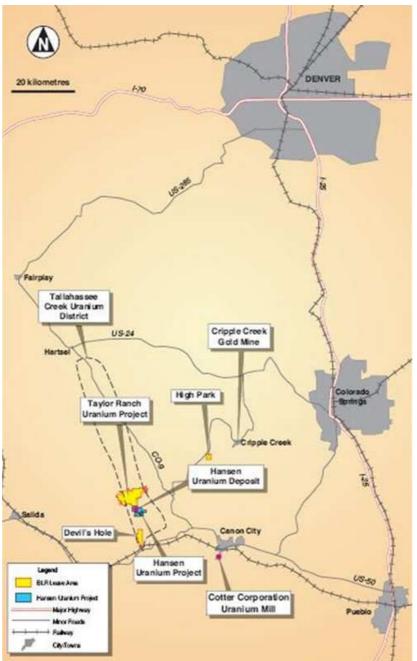
# **Project Overview**

# **Taylor Ranch / Hansen Uranium Project (100%)**

## Background

BLR's Taylor Ranch / Hansen Uranium Project is located approximately 150km southwest of Denver in Colorado USA, as shown in Figure 1.

Figure 1 Location of Taylor Ranch / Hansen Uranium Project



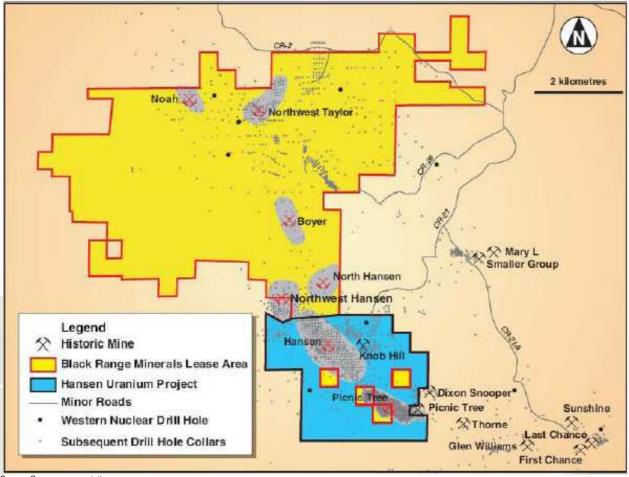
Source: Company website



The Project location is within the historical Tallahassee Creek Uranium District which was the focus of several open pit and underground uranium mining operations between 1954 to 1972. Total production from the region was 79,306t at an average grade of 0.25% U<sub>3</sub>O<sub>8</sub> (2,500ppm U<sub>3</sub>O<sub>8</sub>) for a total of 435,000lbs of U<sub>3</sub>O<sub>8</sub>. One of the USA's only four licensed uranium mills is located in Canyon City, which is approximately 35km southeast of the Taylor Ranch / Hansen Project.

The location of historical mines within the region is shown in Figure 2.

#### Figure 2 Historical Mines in the Tallahassee Creek Uranium District



Source: Company presentation

#### **Resources and Reserves**

The Taylor Ranch / Hansen Uranium Project JORC Code Resource is summarised Table 1 and Table 2 for cut-off grades of 0.025% and 0.075%  $U_3O_8$ , respectively.

#### Table 1 JORC Resources (using a cut-off grade of 0.025% U<sub>3</sub>O<sub>8</sub>)

Deposit	Tonnes (Mt)	Grade U <sub>3</sub> O <sub>8</sub> (%)	U <sub>3</sub> O <sub>8</sub> (lbs)
Taylor Ranch Uranium Project			
Indicated	17.91	0.057	22.57
Inferred	29.90	0.057	37.65
Total	47.81	0.057	60.22

Source: Company 2010 Annual Report



#### Table 2 JORC Resources (using a cut-off grade of 0.075% U3O8)

Deposit	Tonnes (Mt)	Grade U <sub>3</sub> O <sub>8</sub> (%)	U <sub>3</sub> O <sub>8</sub> (lbs)
Taylor Ranch Uranium Project			
Indicated	4.40	0.111	10.78
Inferred	6.39	0.121	16.98
Total	10.79	0.117	27.76

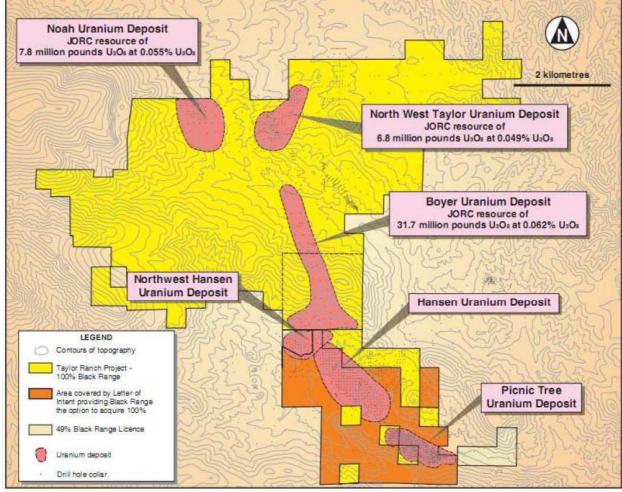
Source: Company 2010 Annual Report

There are several deposits within the Taylor Ranch / Hansen Uranium Project including Noah, North West Taylor, Boyer, Northwest Hansen, Hansen and Picnic Tree.

Given the relatively large size of the total tenement package together with the high grade nature of the deposits, BLR has the opportunity to consolidate and develop a larger scale operation based on a substantially higher resource and lower cut-off grade. BLR will also have the flexibility to develop a smaller scale and more selective mining operation based on a reduced tonnage and higher grade resource (using a higher cut-off grade).

The location of the uranium deposits is shown in Figure 3.

#### Figure 3 Location of uranium deposits within the Taylor Ranch / Hansen Uranium Project



Source: Company presentation



# Historical Scoping Study – Taylor Ranch Uranium Project

A scoping study has been completed on the Boyer Uranium Deposit, within the Taylor Ranch Uranium Project. The primary aim of the scoping study was to identify the key costs and viability involved with developing and operating a mine for the deposit.

The key findings from the scoping study included:

- development and operation of a 1mtpa underground mine;
- ore grades of 0.12% 0.13% U<sub>3</sub>O<sub>8</sub> (1200-1300ppm);
- treatment of ore from a conventional acid leach processing facility;
- U<sub>3</sub>O<sub>8</sub> production of circa 2.2mlbs per annum;
- cash cost of production of circa US\$34/lb U<sub>3</sub>O<sub>8</sub>; and
- initial capital expenditure of US\$160m for the construction of the project.

BLR is currently in the process of re-evaluating the scoping study results for the project with a view to issuing a revised feasibility study. Given that BLR has exclusive access to increase the scale of the resource, we anticipate that the revised feasibility study will incorporate a higher production rate. In addition, BLR now has access to open cut mineral inventories and will pursue these deposits in preference to higher cost underground deposits such as the Boyer Uranium Deposit. We anticipate that the revised feasibility will provide improved economics for the project.

## Mineralised Inventory – Hansen Deposit

The Hansen deposit contains a non-JORC mineralised inventory of 15-20mt with an average grade of 0.06-0.08%  $U_3O_8$  for approximately 30mlbs of  $U_3O_8$ . Even though more than 1,000 holes have been drilled to delineate the deposit, the mineralisation at the deposit is yet to be classified as JORC Code compliant.

The Hansen deposit mineralised inventory is shown in Table 3.

#### Table 3 Mineralised Inventory - Hansen Deposit

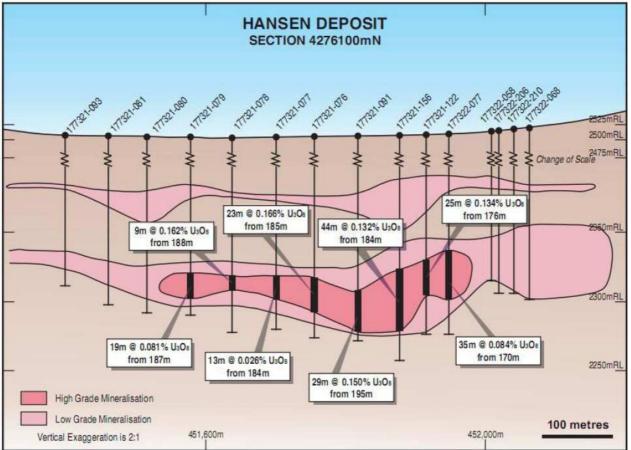
Deposit	Tonnes (Mt)	Grade U <sub>3</sub> O <sub>8</sub> (%)	U <sub>3</sub> O <sub>8</sub> (Ibs)
Hansen Uranium Project			
Target	15-20	0.06-0.08	30

The Hansen deposit comprises a large flat-lying sandstone-type uranium system with a high grade component being up to 45m thick. The deposit is approximately 1,400m long, 500m wide at depths from 150m to 200m below surface.

A typical cross section of the Hansen deposit is shown in Figure 4.



#### Figure 4 Cross-Section of the Hansen Deposit



Source: Company presentation

## Historical Feasibility Study – Hansen Uranium Project

During the early 1980s three feasibility studies were completed and all permits for mining had been approved. The feasibility studies considered all relevant aspects for the development and operation of the project, including geological modelling, mine designs, supporting metallurgical testwork, detailed engineering for the processing plant and infrastructure. All necessary environmental approvals were obtained. Ultimately the project was never developed due to a collapse in the uranium price.

During this period (1977-81) reconnaissance exploration was undertaken on the surrounding areas that are now held by BLR, including a total of approximately 2,200 holes for more than 350,000m.

## Exploration and Feasibility Study Program

BLR is ideally placed to leverage from the available historical drilling data and feasibility studies with a view to re-evaluating the project based on the development of a substantially larger resource across a number of deposits.

Going forward, BLR's exploration and feasibility work program will include:

- finalisation of a JORC resource on the Hansen deposit;
- 6-12 diamond core hole drilling program to collect geotechnical, metallurgical and hydrological data for mine design purposes;



- update the historical feasibility study for the project; and
- baseline environmental studies are continuing in preparation for mine permitting.

The proposed work program will provide BLR with a significant opportunity to delineate and assess the economic viability of the project on a larger scale basis, rather than on one deposit alone. We believe that BLR is well placed to deliver an economically viable updated feasibility study, secure regulatory approvals and move towards development of the Taylor Ranch / Hansen Uranium Project.

## Environmental and Regulatory Considerations

The environmental and regulatory issues surrounding BLR's projects are an important factor for consideration. One of only four licensed uranium mills within the USA is located in Canyon City, approximately 35km southeast of the Taylor Ranch / Hansen Project. This suggests that the relevant regulatory bodies have historically been receptive to uranium mining and processing within that state.

On 30 September 2010 the Colorado Department of Public Health and Environment (**Department**) approved the application for a Radioactive Materials license for the Pinon Ridge uranium mill (owned by Energy Fuels Inc), to be built in western Montrose County, Colorado. This further supports the view that the relevant regulatory bodies are receptive to uranium development in the district.

BLR is currently undertaking base line environmental studies and will compile all relevant documentation for development approval. Our view is that BLR will ultimately move towards development and operation through one of two options including:

- development approval on a stand alone basis, or
- enter into toll treatment arrangements with existing licensed uranium mills in the region.



# Keota Uranium Project, Colorado USA (100%)

BLR holds mineral rights on three properties covering approximately 2,750 acres. Mineralisation at the Keota Uranium Project is relatively shallow, high grade and potentially amenable to open cut or in-situ recovery mining. The deposit contains approximately 500 historical drill holes and forms the basis of the previously delineated mineralisation. To date, BLR has obtained analytical data for 20 of these previously drilled holes. A review of this data has showed very encouraging results including:

- 3.0m at 0.17% U<sub>3</sub>O<sub>8</sub> (or 1,700ppm) from 84.4m; and
- 3.1m at 0.13% U<sub>3</sub>O<sub>8</sub> (or 1,300ppm) from 89.3m.

Notwithstanding the limited amount of data available for the Keota Uranium Project, the presence of the above high grade intersections provides a compelling basis for the further exploration work on the project.



# Jonesville Coal Project, Alaska USA (100%)

BLR holds two leases covering 1,450 acres located approximately 100km northeast of Anchorage USA. The Jonesville Coal Project is readily accessible by road and rail, as shown in Figure 5.

#### Figure 5 Location of the Jonesville Coal Project



Source: Company website

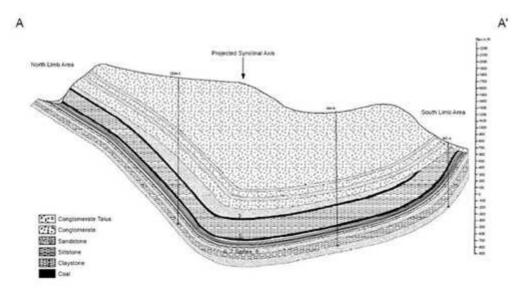
The project has produced approximately 5.5mt of high quality thermal coal between 1920 and 1968 using a combination of open pit and underground mining. Coal was supplied to local power plants in Anchorage until the relevant utilities converted to gas fired power stations.

The structure of the coal bearing seams comprise both surface outcrops with open cut potential and underground seams with a maximum depth of 800m. BLR has indicated that approximately 50% of the resources are hosted by seams that dip at greater than 20 degrees. Underground mining of coal seams with a dip of greater than 20 degrees may be problematic (using conventional underground mining methods) and may result in the sterilisation of those parts of the deposit.

A typical cross section of the Jonesville coal measures is shown in Figure 6.



#### Figure 6 Cross Section of the Jonesville Coal Measures



Generalized Geologic Cross Section of Wishbone Hill - Block 3 Area

Source: Company presentation

The project has a JORC resource of 130.7mt as shown in Table 4.

#### **Table 4 JORC Resources**

Deposit	Tonnes (Mt)
Jonesville Coal Project	
Measured	17.0
Indicated	17.3
Inferred	96.4
Total	130.7

Source: Company 2010 Annual Report

The coal quality is a high quality volatile bituminous rank with excellent steam or thermal combustion qualities suitable for coal fired power generation. The coal has a heat content of 10,400-13,400 Btu/lb (5,778-7,445 Kcal/kg) and a relatively low sulphur content of 0.3-0.4%.

BLR has indicated that it will reassess historical data and conduct further exploration. While the Jonesville Coal Project has a substantial JORC resource of 130.7mt, at least 50% of the resource may be lost due to steeply dipping geology (dip at greater than 20 degrees).



# **Corporate Structure**

The BLR capital structure is shown in Table 5.

#### **Table 5 Capital Structure**

Туре	No. (M)
Ordinary Shares – tradeable	636.39
Ordinary Shares – subject to escrow	4.60
Total issued ordinary shares	640.99
Options (expiry date 28/2/2011, exercise price 4.5c)	97.39
Options (expiry dates from May 2011 to March 2014, av. exercise price 10.5c)	5.75
Total issued ordinary share (fully diluted)	744.13
Source: Company appouncemente	

Source: Company announcements

The major shareholders are shown in Table 6.

### **Table 6 Major Shareholders**

00.50	
22.58	3.52%
16.84	2.63%
12.12	1.89%
	16.84

Source: Company announcements

An overview of the board and management are shown in Table 7.

## **Table 7 Board and Management**

Board and Management	% Interest	Brief Description
Alan Scott Non-Executive Chairman	0.09%	<ul> <li>Currently Managing Director and Chief Executive Officer of HiTec Energy Ltd.</li> <li>Formerly Managing Director and Chief Executive Officer of Aurora Gold Limited.</li> <li>22 years with Rio Tinto Limited/CRA Limited.</li> <li>13 years as accountant with Coopers &amp; Lybrand in Sydney, Montreal, London and Wollongong.</li> </ul>
Mike Haynes Managing Director	3.52%	<ul> <li>17 years experience in the international mineral exploration industry.</li> <li>Honours degree in geology and geophysics in 1992.</li> <li>Held technical positions with both BHP Minerals Limited and Billiton plc.</li> <li>Director of Genesis Minerals, Overland Resources and Coventry Resources.</li> <li>Previously director of Iberian Resources and Bellamel Mining.</li> </ul>
Duncan Coutts Director	0%	<ul> <li>19 years experience as a mining engineer.</li> <li>Formerly Chief Operating Officer for the Western Australian and PNG operations of Harmony Gold Australia.</li> <li>Held position as Chief Development Officer with Metals X.</li> </ul>
Nick Day Company Secretary	0%	<ul> <li>15 years in corporate finance and the resources industry.</li> <li>Various roles in strategic planning, business development, acquisitions and mergers, bankable feasibility studies, and project development general management.</li> <li>Held CFO and Company Secretary positions Antaria and with AIM and ASX listed mining company Albidon.</li> </ul>

Source: Company website



# Risks

The primary risks include:

- Mineralised inventories BLR controls a non-JORC mineralised inventory for the Hansen Uranium deposit. No guarantee can be given that this mineralised inventory will ultimately converted to a JORC resource.
- **Commodity prices** uranium prices may fluctuate in the future. Any substantial decline in the uranium price may affect the economic viability of BLR's projects.
- Environmental and regulatory approvals BLR will be required to secure all relevant environmental and regulatory approvals for the development and operation of its uranium projects. Any material delays securing approvals may affect the timing of production and value for BLR.
- Development risk BLR faces potential development and cost risks associated with completing the development and commissioning of the operation, on time and on budget. No guarantee can be given that BLR will achieve this in the near term or at all.
- **Operational** cost pressures for services, equipment and skilled personnel are a key risk for BLR.

# StoneBridge

# **Research Report**

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#### Friday, 25 February 2011

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#### **Analyst Certification**

As at the time of writing this report, the author did not hold shares in Black Range Minerals ("BLR" or the "Company").

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The StoneBridge Group has been appointed as Underwriter for Listed Options of 97.39 million that are exercisable at A\$0.045 and that expire on 28 February 2011. StoneBridge will underwrite the options up to a value of A\$4.38 million. StoneBridge will receive a flat fee of A\$250,000 for performing this role.

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#### **Recommendation Structure**

SPECULATIVE BUY: >30% absolute return over the next12 months but carries significantly higher risk than its sector.

BUY: > 15% absolute return over the next12 months.

HOLD: requires a 5-15% total return over the next 12 months.

SELL: absolute return is forecast to be less than 5% over the next 12 months.

RESTRICTED: The company is currently restricted from making an investment recommendation on the firm due to ECM, Corporate Finance or M&A advisory.