

6 December 2022 Webinar

Legislative & Regulatory Framework for KALiNA's Project Development focus in Alberta



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# **Capital Overview**

Financial Profile			Top Shareholders		
Share Price <sup>2</sup>	AU\$0.023	Т	op Shareholders		
Basic Shares O/S <sup>2</sup>	AU\$1.52B		Sinalunga Pty Ltd (HNW)	7.64%	
Market Cap <sup>2</sup>	AU\$34.85m		Carpe Diem Asset Mgmt (HNW)	4.36%	
Debt <sup>1</sup>	AU\$0m		Lightglow Enterp Pty Ltd (HNW)	3.16%	
Cash <sup>1</sup>	AU\$4.22m		KEO Projects (HNW)	2.37%	
Incentive Options <sup>2</sup>	54.2m	B	Board & Management	~6%	
<sup>1</sup> As at 31 Sep 2022, <sup>2</sup> As	at 5 Dec 22	_			
25 20 15 10 5	\ 			Volumo	e —Share



**Corporate Capital Raises** 

#### KALINA Clean. Energy.

## **Exceptional Team** Team has over 150 years and 9 GW of experience in power development

<b>Stephen White</b> Chairman Canada	<ul> <li>Former CEO of Veresen Inc; pipeline, midstream &amp; gas processing assets, sold to Pembina in 2017 for \$9.7 billion</li> </ul>	<b>Kevin Wallace P. Eng</b> Technology Developme Commercialization
<b>Ross MacLachlan</b> Managing Director , CEO Canada	<ul> <li>Former Director / Investor with Pristine Power in Canada</li> <li>40 years in technology commercialization; project finance and major US &amp; Canadian govt funding</li> </ul>	<b>Bob Rosine</b> Alberta General Manag
<b>Jeffry Myers</b> Executive Director Canada	<ul> <li>Senior Operating Partner at Stonepeak Infrastructure Partners (US\$23B AUM infrastructure fund)</li> <li>Former Chairman &amp; CEO and Co-founder of Pristine Power</li> </ul>	<b>Ken Spinner</b> EPC Management
<b>Peter Littlewood</b> Director Hong Kong	<ul> <li>Former Group Director of Operations at China Light and Power Group (CLP) Asia-Pacific region (market capitalization: US\$25.38n)</li> </ul>	<b>Julia Ciccaglione</b> Regulatory & Governme
<b>Malcolm Jacques</b> Director Australia	<ul> <li>Independent Technical and Regulatory Consultant</li> <li>Included BP Ventures, MIT (USA) &amp; Strategic Research Foundation</li> </ul>	<b>Geoff Scott</b> Analyst
<b>Timothy Horgan</b> Executive Director Australia	<ul> <li>Lawyer and business executive with international experience in mining, energy and licensing: Includeed Gillette Company and Universal Coal</li> </ul>	

• International authority on waste heat to power & geothermal power ent & • Former senior engineering & global business development executive for 23 years with internationally acclaimed Power Engineers Involved with 750MW of new geothermal project deployment • Chief Operating Officer (Oil & Gas) at Grafton Asset Management • Former Chief Operating Officer at Pipestone Energy aer • Former Co-founder & Vice President of engineering & Construction of Pristine Power and its acquiring company Veresen • Over 28 years of experience managing EPC Power projects • Former Co-founder & Vice President of Regulatory & Environment at Pristine Power and its acquiring company Veresen ent • Environmental scientist with over 20 years experience in regulatory, impact assessment, and permitting for power projects • Former analyst with Westcoast Power and Pristine Power • Over 30 years of experience in equity financed economic modelling for large scale utility projects



# **KALINA's alignment with Canada's net-zero road map**

## • <u>Presentation Outline</u>:

- About KALiNA
- Canada's Road Map to Net-Zero Economy by 2050
  - Legislation & Regulations currently in place
  - Legislation & Regulations proposed (pending)
- Implications for Canadian Power Markets
  - Alberta Power Market
- Implications & Opportunities for KALiNA's Project Development in Alberta
  - Saddle Hills Project
  - Major Power Plants Utilizing Carbon Capture & Sequestration ("CCS")





# **About KALiNA Power**



### **Technology leader in Geothermal** and Waste Heat to Power

- Superior zero emissions technology
- One of the most substantial intellectual property portfolios in the sector
- Proven across a range of industrial • applications at 16 plants around the world



### International deployment of technology on an industrial scale

- Technology platform for \$billion markets across a wide range of industries
- Technical team has over 100 years of technology commercialization experience
- Establishing major commercial and technical strategics for international deployment

Mission Statement: To establish a profitable business in Alberta that will serve as a platform to deploy the KALiNA Cycle® to international markets and become a major player in the global WHP market





### Major near-term value drivers with power project development team

- Power development team has over 150 years and 9 GW of experience
- Saddle Hills project is Shovel Ready •
- Developing large-scale power projects • using Carbon Capture & Sequestration in response to new legislative drivers



## Canada's Road Map to Net-Zero Economy

### • CARBON TAX: (in effect)

- Progressive tax on carbon emissions to increase from \$65/ton in 2022 to \$170/ton by 2030
- Results in overall higher prices for electricity and a transition to widely deployed renewables
- Effectively eliminates coal-fired generation and phases out inefficient gas-fired generation

### • INVESTMENT TAX CREDIT ("ITC"): (in effect)

- 2022 budget includes 50% ITC for capital cost of Carbon Capture & Sequestration ("CSS")
- Gas-fired power generation that use CCS can achieve net-zero emissions

### • CANADA CLEAN ELECTRICY REGULATION: (pending)

- Framework to deploy renewables on a major scale & utilize gas-fired power generation in the transition
- Prior to 2035: Fossil-fueled power must "financially abate" 100% of emissions (pay carbon tax)
- Post 2035: Fossil-fueled power must "physically abate" emissions (carbon capture) or shut down
- o Canada Clean Electricity Regulation is being published in late 2022 (first step toward enacting legislation)

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Sequestration ("CSS") ssions

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# **Implications for Canadian Power Markets**

- Mandating net-zero electrification of industries nationwide will require a major expansion of new power plants
  - Gas-fired power generation with carbon capture will be required to meet demand
  - Deploying intermittent renewables requires dispatchable gas-fired Baseload & Peaker capacity
- Regulating emissions will result in a major turnover of power generating assets nationwide • Coal-fired generation effectively eliminated / gas-fired plants uncompetitive unless using carbon capture • All new gas-fired combined cycle power plants will be built using CCS
  - Strong market expected for new gas-fired Peakers with expected regulated life of 10-20 years
- Implications for Alberta as it faces growing demand for dispatchable power
  - 5,700 MW of coal-fired baseload generation to retire or be re-powered
  - 5 Energy Emergency Alerts past 2 years as market reaches capacity
  - 2021 averaged \$101.93/MWh / 2022 YTD (end of Nov) averaged \$147/MWh
  - Hourly price settled above \$500/MWh 310 times in 2021
  - Alberta is unique with major gas reserves & extensive network of reservoirs for carbon sequestration
  - o Implementing regulated regime for licensed, CO2 carbon hub pipeline infrastructure & sequestration





# **KALINA Distributed Power ("KDP")**

- KALiNA Power Limited ("KPO:ASX") established KDP in 2018 to develop power projects in Alberta
- KDP is seeking funding partners to participate in its Saddle Hills facility and growing portfolio of projects
- Developing projects aligned with government initiatives that utilize natural gas in the Transition to net-zero commitments, including:

### • Distribution Connected Power Projects:

- Simple Cycle and Combined Cycle plants with dispatchable power as a foundation to address the intermittent nature of renewables
  - Projects ranging in size from 20-64MW
  - Site control secured with long term crown lease
- Transmission Connected Power Projects:
  - Combined Cycle integrating Carbon Capture & Sequestration ("CCS")
    - Projects ranging in size from 200 MW 450 MW
    - Site control term sheet in place at one location and 3 sites pending

#### KALiNA Distributed Power Limited



#### Exceptional Project Execution Team Extensive Project Portfolio



# Saddle Hills - Phased deployment strategy

#### • Saddle Hills is permitted to construct & operate up to 64MW in combined cycle

- Project to align with goals of Federal and Provincial legislation
  - Phased deployment strategy accelerates deployment, reduces risk and positions the project to respond to legislative outcomes

#### • Phase 1: Initially deploy in Simple Cycle Peaker mode:

- Strong market need for Dispatchable Peaking Capacity
- Proceed with one 22MW Siemens SGT-600 gas turbine
- Phase 2: Add Combined Cycle integrated with CCS as legislative and commercial circumstances warrant:
  - o 10MW bottoming KALiNA Cycle® using Baker Hughes Vapor Turbine
  - CCS deployed by way of a competitive bidding from major vendors

#### • Phase 1 in Simple Cycle Peaker mode is ready for funding now:

- Soliciting project financing for phased deployment strategy
- Details from the pending draft of Canada Clean Electricity Regulation expected in December '22.
  - May have a direct impact on the plant's size, configuration and regulated commercial life of the project.

#### Saddle Hills is Shovel Ready



# **Commercial Arrangements of the Highest Calibre**

## SIEMENS

• SGT-600 gas turbine vendor. Over 350 SGT-600 sold, 10 million operating hours Performance and delivery guarantees with long-term services agreement

### • SNC1-2 Vapour Turbine Module

• Performance and delivery guarantees with long-term services agreement

ENERFLEX

Baker Hughes >

- KDP's Owner's Engineer; internationally renowned design and power industry firm
- 30 years experience with KALINA Cycle® Technology

### Standardized Modular Design

• Fabrication of modules with performance and delivery guarantees





## Saddle Hills – Performance if Peaker operated the past 23 months

CAD	22 MW Simple Cycle Peaker	Capex* \$68 MM	
Year	<b>Capacity Factor</b>	Annual EBITDA	
2021	51%	\$9 MM	
2022	49%	\$14 MM	

- This table illustrates what a Peaker at Saddle Hills would earn had it been built and operating from 1 January 2021. •
- The Capex represents the total cost of site development, equipment, construction and commissioning which have been • quoted by 3<sup>rd</sup> parties including Power Engineers, Enerflex and Siemens Energy.
- KALiNA's model has been verified by 3<sup>rd</sup> parties and calculates the daily and hourly dispatching of the plant in Peaker ulletmode.
- The model has calculated the EBITDA using the inputs of actual spot prices of electricity and the spot prices of gas for each of the two years, along with the Operating & Maintenance costs which have been determined by the KALiNA team in concert with 3<sup>rd</sup> parties.





# **Transmission-Connected Power Projects with CCS**

- Carbon Capture & Storage ("CCS") represents a very large and emerging market opportunity
- Canada and the US are making CCS a critical part of their net-zero strategies
- The increasing demand for CCS in power generation, and oil & gas industry is one of the most significant factors projected to drive the growth of the CCS market<sup>1</sup>
- Power generation to be the fastest growing industry in the CCS market:
  - Fossil fuel power plants generate a significant amount of CO2 emissions, which are the main cause of climate change
  - Among CO2 mitigation options, CCS is considered the only technology that can significantly reduce the emissions of CO2 from fossil fuel combustion sources

1. https://www.globenewswire.com/news-release/2022/10/07/2530334/0/en/North-America-led-the-carbon-capture-utilization-and-storage-market-in-terms-of-value-in-2021-and-is-projected-to-register-a-CAGR-of-14-1-between-2022-and-2027.html





# **Transmission-Connected Power Projects**

## KALINA is developing a multi-\$billion portfolio of projects

## Gas-fired Combined Cycle Power Plants integrated with Carbon Capture & Sequestration ("CC-CCS")

- Projects range in size from 200 MW 450 MW
- Capex (net of ITC) of each project range from CAD \$700 MM \$1.3 Billion
- Will capture ~ 95% of CO2 generated and geologically sequester CO2 in approved, licensed reservoirs
- Projects align with Alberta emissions regulations and pending federal Canada Clean Electricity Regulation
- Projects generate substantial net emissions attributes for monetization in all cases (trading carbon credits)

#### • Site selection criteria governed by triangulating key criteria

- Viable Electrical Interconnect to grid with adequate capacity
- Gas supply infrastructure and capacity
- Carbon sequestration infrastructure, including pipeline and licensed reservoir capacity

### • KALINA is now securing site-control at several prime locations using long-dated options

- Secured site-control for one location and 3 others in progress
- Gas supply, electrical interconnection and CO2 sequestration are in progress and well developed
- 3 sites are targeting in-service dates in 2027



# **CC-CCS Power Plant - Preliminary Rendering**





# **CC-CCS** Project Development

### • KALiNA's business model as project developer:

- Earn a cash development fee of  $\sim 4\%$
- Carried equity interest in projects above the investor's minimum threshold return
- Minority, transferable co-investment rights

### Portfolio has attracted indications of market interest from major natural gas producers:

- Attractive commercial value of long-term gas tolling and capacity contracting
- Equity investment in projects being considered by gas producers

### Power Plant & CCS providers engaged in a well-advanced competitive bidding process:

- Power Island: Large, established OEM's with suitable performance capabilities
- Post-Combustion Carbon Capture: Leading international suppliers providing performance guarantees
- EPC firms: Capable of delivering major \$billion projects

### Project development costs including Pre-FEED for the total portfolio represents ~\$100mm

- Selecting strategic partners to participate in development funding to secure their position in the portfolio
  - Scope and timing of project development is dependent on the level of funding support from partners







# Conclusion

- KALINA has taken steps to respond to legislative & regulatory changes
- Leveraging the talents of its exceptional team to achieve near-term commercial success on a massive scale
- Capital light business model as a project developer with huge upside
- Attracting major commercial and strategic interest for its portfolio of projects
- Deploying its zero- emissions technology platform for \$billion market segments
- Mission Statement: To establish a profitable business in Alberta that will serve as a platform to deploy the KALiNA Cycle® to international markets and become a major player in the global WHP market

