



## TOWN OF HINTON

Minutes of the Regular Meeting of Council  
held February 7, 2017  
in Council Chambers

### **Present:**

Mayor Rob Mackin, Councillors Glen Barrow, Ryan Maguhn, Marcel Michaels, Albert Ostashek, Stuart Taylor (by telephone), Matthew Young

### **Also in Attendance:**

Mike Schwartz, Chief Administrative Officer, Denise Parent, Director of Corporate Services, Gordie Lee, Director of Infrastructure Services, Wendy Jones, Director of Planning & Development, Rhonda West, Executive & Legislative Assistant

**Refer to the Regular Council Meeting Agenda package for [February 7, 2017](#) for detailed background information.**

### **ORDER**

Mayor Rob Mackin called the Regular Council meeting to order. The time was 4:05 p.m.

### **ADOPTION OF AGENDA**

**MICHAELS - That the agenda be adopted as presented with the addition of one (1) In Camera item: Contract Negotiations (FOIP).**

**CARRIED**

TM Gunderson of Epoch Energy would be arriving late due to weather conditions. Council proceeded with the scheduled action items and would hear the delegation when Mr. Gunderson arrived.

### **COUNCIL MINUTES FOR ADOPTION**

1. Regular Meeting of Council Minutes – January 17, 2017

**BARROW - That the Minutes listed above be approved as presented.**

**CARRIED**

### **CITIZENS "MINUTE WITH COUNCIL"**

Hank Smit and Tara Million from the Hinton Municipal Library Board spoke to Council about the direction of council to maintain the library municipal appropriation at \$475,000 over the next three (3) years. They provided Council with an anticipated forecast of a reduction in services and programs that the budget freeze will have on the library operations (see Attachment #1).

### **DELEGATIONS AND PRESENTATIONS**

Lisa Mueller, Director, CEO & President and TM Gunderson, Director and CFO of Epoch Energy provided Council with an update with respect to the Pre-Feed Study on the Hinton Geo-Thermal District Energy project (see Attachment #2).

**ACTION ITEMS**

1. Town of Hinton Municipal Library Board Bylaw #1105

**MAGUHN - That Council give the Town of Hinton Library Board Bylaw #1105 third and final reading.**

**CARRIED**

2. Line of Credit for Operating Expenses Bylaw #1107

**YOUNG - That Council give Bylaw #1107 first reading.**

**CARRIED**

**MICHAELS - That Council give Bylaw #1107 second reading.**

**CARRIED**

**YOUNG - That Council give unanimous consent for third reading of Bylaw #1107.**

**CARRIED**

**BARROW - That Council give Bylaw #1107 third and final reading.**

**CARRIED**

**INFORMATION ITEMS**

1. Council Information Packages #1, #2 for February 7, 2017

**YOUNG - That Council Information Packages #1 and #2 for February 7, 2017 be accepted for information.**

**CARRIED**

**REPORTS FROM MAYOR, COUNCIL, CHIEF ADMINISTRATIVE OFFICER**

1. Council Reporting (Training/Conferences/CEAC, Listening Teams, All Other Committees)

Councillors reported on the various committees, meetings and activities they attended since the last Regular Council meeting and what they plan on attending in the coming weeks.

Councillor Michaels left the meeting at 5:33 p.m.

**MACKIN – That Council approve the Mayor writing a letter requesting a meeting with the appropriate Minister with respect to seniors lodging and long term care in Hinton.**

**CARRIED**

**MACKIN - That Hinton Town Council provide a letter of endorsement to Wayfinder Corp. with respect to their application for a Capital Investment Tax Credit specific to the manufacturing and processing facility located in Yellowhead County.**

**CARRIED**

Councillor Barrow thanked Hans van Klaveren for his work on keeping the ice on Maxwell Lake in perfect condition for skating.

Council thanked Rhonda West for her service to the Town and wished her the best of luck in her new position at the Town of Beaumont.

2. Councillor Information Requests (Email)

Refer to page 15 of the February 7, 2017 Regular Council Agenda.

3. Chief Administrative Officer Report

Chief Administrative Officer Mike Schwirtz provided an update on administrative matters.

**MOVE IN CAMERA**

**YOUNG - That the Regular Council meeting move in camera.**

**CARRIED**

The time was 5:46 p.m.

**OSTASHEK - That Regular Council meeting revert to regular session.**

**CARRIED**

The time was 6:34 p.m.

**ADJOURNMENT**

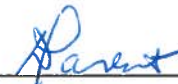
**BARROW - That the Regular Meeting of Council adjourn.**

**CARRIED**

The time was 6:34 p.m.



\_\_\_\_\_  
Mayor



\_\_\_\_\_  
Director of Corporate Services



**Hendrik Smit**  
**Library Board Chair**  
803 Switzer Drive, Hinton, AB T7V 1V1  
www.hintonlibrary.org  
Phone: (780) 816-1015  
hsmit@shaw.ca

February 7, 2017

Attachment #1

Dear Mayor Mackin and Town of Hinton Councillors,

As you know, the Hinton Library Board presented our 2017 municipal appropriation request of \$494,155 to the Mayor and Councillors on November 8, 2016. After a follow-up meeting with Council on January 10, 2017 to answer further questions, Council approved a 2017-2019 annual municipal appropriation of \$475,000. This created a \$19,155 deficit for the 2017 library operating budget, and projected deficits of \$24,097 and \$29,088 for the 2018 and 2019 operating budgets.

As trustees who are fiscally responsible for public monies, the Library Board believes that having a balanced library budget is a priority. We have carefully considered our options for reducing the operating budget and have had to make some hard decisions regarding how to deliver library service to the residents of Hinton and the surrounding area of Yellowhead County. It is with great regret that the Library Board announces that in order to create a balanced library budget based on a 2017-2019 municipal appropriation of \$475,000, the Library Board would have to:

1. **Year One – close the Hinton Coal Branch Archives** – this would impact many residents of Hinton and area, as they would no longer have access to the history of Hinton which is stored in the archives. As well, it would impact those citizens and organizations who have placed materials in the archives or donated to the archives. The primary donors and users of the archives are older residents, long time residents, and the media.
2. **Year Two – discontinue the TD Summer Reading Club** – this would impact many families in Hinton and area, as there would no longer be free literacy programming available for their children to attend. As well, it would lower the reading ability of school age children when they return to classes in September, as participating in reading activities over the summer has been proven to help children maintain literacy skills. In 2016, we had 146 children aged 5-12 from diverse socio-economic backgrounds participate in the TD Summer Reading Club.
3. **Year Three – close the Hinton Municipal Library on Mondays** – this would impact many residents of Hinton and area, as they would no longer have access to any library services one day a week. The free services that many people access at the library include: wi-fi, computers, lounging and socializing, programs, browsing the collection, ordering or picking up materials, and asking for assistance with technology or computer instruction. Closing the library on Mondays would reduce community library use by about 15%.


The Hinton Library Board respectfully urges Council to reconsider their decision to reduce the 2017 municipal appropriation and to instead approve a municipal appropriation of \$494,155 in the Town's 2017 operating budget.

Sincerely,

A handwritten signature in blue ink, appearing to read "Hank Smit".


Hank Smit

***"A Library says a lot about a community"***




# Pre-Feasibility Report Project Update

Hinton Geothermal District Energy System  
February 2017  
Epoch Energy





## Agenda

- Overview
  - On Scope/Timeline - Work to Date & Team
- Upstream:
  - Geological Review & Reservoir Selection
  - Well Selection Criteria & Solutions
- Midstream:
  - Direct Heat Facilities
  - From Wellhead to Distribution of Heat Supply
- Downstream:
  - Heat Flow Requirements to Facilities
  - Surface Infrastructure & Design/Construct
- Financial Modelling
- Ongoing Project Management
  - Government & Community Dialogue
  - Contracting & Funding

## The Opportunity

- Hinton Geothermal District Heating Project
  - Use plentiful geothermal energy to replace natural gas and electric heating of the significant buildings in town
  - Work with the Oil and Gas companies in the area
  - Put workers back to work
  - Reduce CO2 emissions and escalating carbon taxes
  - Hedge future commodity costs (Natural Gas and Electricity)
  - Bring competitive advantage to the community
  - Foster new Industries like greenhouse food production
  - Build a replicable business model for other Alberta communities and first nations





## Project Overview

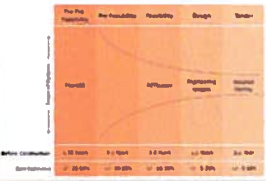
Pre-feasibility Study for Hinton Geothermal Direct Heat Project



### Timeline for Project Development



- Engineering timeline: Pre-feasibility to Completion = 3-5 years on average
- Availability of data and pre-existing infrastructure aids development
- 2020 timeline for project completion
- Direct Heat project for >100,000 GJs of energy interconnected into direct heat customers aligns with carbon taxing at \$50/ Tonne of CO<sub>2</sub>



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### Project Scope for Pre-Feasibility



- Upstream: Geothermal Resource Production
  - Research/define mining for geothermal formation/resource potential & reservoir capacity
  - Well analysis and cost analysis for viable for geothermal energy production
  - Engage oil and gas operators of wells
- Midstream: District Energy System
  - Design & cost estimate of HDDE and distribution system
  - Identify risks/opportunities with facility options and locations
  - Address regulatory requirements & schedule
- Downstream: Customer Energy Services
  - Interconnection and tier of prospective customers
  - Identify thermal load and load profile; Design & Cost Analysis
  - Energy Efficiency and GHG calculations
- Project Financial Assessment
  - Preks: unlevered financial analysis for overall project design

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### Technical Team for Pre-Feasibility Study



- Epoch Energy
- Enerpro Engineering
- Williams Engineering
- Stack'd Consulting
- Software
  - Direct heat modelling
  - GeoScout/AER Data
- Geology team:
  - Petroleum
  - Hydrogeologist
  - Geothermal/Heat flow modelling
- Engineering:
  - Reservoir
  - Drilling Completions
  - Abandonment
  - Facilities/Pipelines
  - Building

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### Upstream: Geology for Geothermal

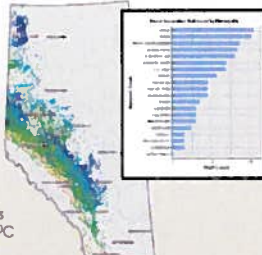


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### EPOCH ENERGY DEVELOPMENT

## Foothills Geothermal Potential

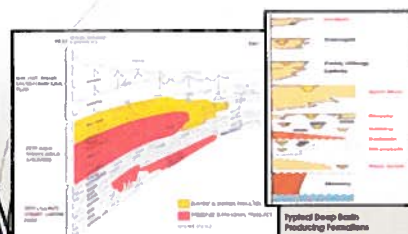
- Rocky Mountain foothills: area of high relief, high hydraulic head and regional water recharge
- Extensive database for the numerous 3-4km TVD oil & gas wells



Map: Oil and Gas wells with Bottom Hole >60°C Temperatures (BH)

### EPOCH ENERGY DEVELOPMENT

## Geology: Petroleum View



- Producing formations are typically hydrocarbon-charged, tight, & over-pressured
- Where porosity is developed, reservoirs are more likely to contain water in the absence of a conventional trap

Figure 1. Estimated Hydraulic Head, Western Canada Basin after Fournelle et al., 2012


### EPOCH ENERGY DEVELOPMENT

## Upstream: Well Selection Analysis

### EPOCH ENERGY DEVELOPMENT

## Upstream: Well Analysis & Selection

- Accumulating extensive data set for well selection: GeoScout, AER, personal research... reviewed >100 wells
- Began analysis & key variable for geothermal applications:
  - Status (Abandoned, Suspended, active...)
  - Well date/age & current conditions
  - Design: Casing, tubular, liners...
  - Well work: log date, DSL, well logging, stimulations...
  - Current ownership
  - Proximity to other wells & infrastructure
- Process has filtered down to ~15 wells with geothermal potential in close proximity


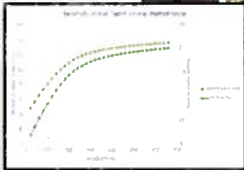


geoSCOUT

### Second life for Oilfield wells

**EPoCH ENERGY DEVELOPMENT**

- Epoch in ongoing communication with local oilfield operators
- Well Intervention & reconfiguration is fraction of the cost of new drilling
- Researching necessary work to re-complete wells for geothermal production
  - Removing cement plugs & casing
  - Downhole pumps
  - Well stability & corrosion
  - Service rig time...
- Final product: calculation of overall costs/risk associated with multiple well selections & re-configuration for geothermal production

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### Midstream: District Heat Design

**EPoCH ENERGY DEVELOPMENT**

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### Midstream: District Energy System

**EPoCH ENERGY DEVELOPMENT**




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### Midstream: Engineering Direct Heat Facility


**EPoCH ENERGY DEVELOPMENT**

- Heat Distribution
  - Gathered atmospheric data
  - Gathered project data to determine heat loads
  - Gathered regional data (basemap)
  - Created preliminary network model
  - Preliminary sizing of transmission and distribution piping
- Developed strategy utilizing a substation with multiple inputs (multi-well, waste heat recovery, biomass, etc) for redundancy and future proofing




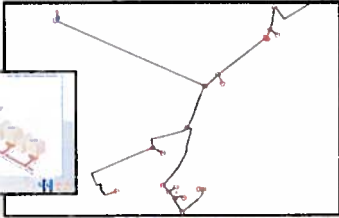
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### Midstream – Heat Distribution Network Model with Substation and Nodes

Use of unique heat flow software for mapping and cost analysis



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### Downstream: Direct Heat Customers

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### Downstream: Mapping Customers



McQuinn Park	10,000
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- Initial Analysis
  - Calculated peak of ~3MWh
  - 40,000's GJ's year for current list of customers
- Building interconnection methods
- Cost analysis for each potential scenario


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### Downstream Engineering

- Building Engineering**
  - Williams Engineering have reviewed all the buildings (except the HIC and Senior Complex)
  - Creating a baseline GHG factor per square foot based on age of building
  - Reviewing energy retrofit feasibility
- Integration Engineering**
  - Sizing heat exchanger and heat meter for individual buildings
  - Integrating District Energy System (DES) into individual buildings
  - Potential retrofitting of existing boilers
  - Potential retrofitting of system to accommodate DES


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## Financial Modeling

Economic analysis of long-term project viability  
 Levelized Cost of Energy and comparison with Natural Gas  
 Full Greenhouse Gas reduction calculations


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## Financial Modeling

- Calculating the avoided cost of carbon
- Forecasting the Business As Usual (BAU) case vs the DES model for economic feasibility
- Input of Total Installed Capital (TIC) costs from Upstream, Midstream and Downstream to financial model
- More of this will be done once costs have come in


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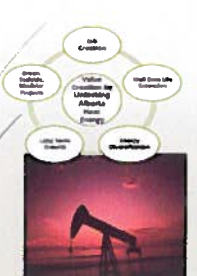
## Project Next Steps

Non-technical Activities (Dialogue and Progress)  
 Completion of Pre-Feasibility Report  
 Local presentations  
 Feedback from Ministers and AER  
 Any updates from Epoch Corporate activities

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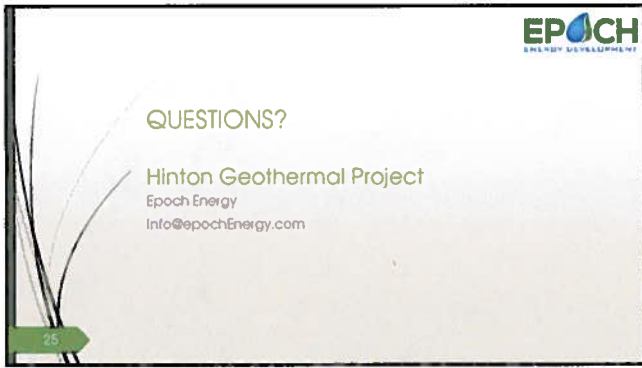


## Project Benefits



- Local source of clean renewable heat supply
- Significant untapped resource potential
- Long-term stable 'non-commodity' base heat pricing
- Community based project
- Reduce GHG associated with Natural Gas heating
- Opportunity for positive, 'green' marketing
- Potential for delayed well suspension & abandonment

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The slide features a light beige background with a decorative graphic of thin, dark, curved lines on the left side. In the top right corner, the EPOCH logo is displayed, consisting of the word "EPOCH" in a bold, sans-serif font with a blue water droplet icon above the letter "O", and the words "ENERGY DEVELOPMENT" in a smaller font below it. The main text on the slide is centered and includes the heading "QUESTIONS?", followed by "Hinton Geothermal Project", "Epoch Energy", and the email address "Info@epochenergy.com". A small green arrow pointing to the right is located in the bottom left corner, containing the number "25".

**EPOCH**  
ENERGY DEVELOPMENT

QUESTIONS?

Hinton Geothermal Project  
Epoch Energy  
Info@epochenergy.com

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