Monroe Drop Hydro

April 18, 2012

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Project summary

- Size: 240 kW
- Owner: Monroe Drop Hydro, LLC
- Project cost: $1.117 million
- Annual expected production: 822 MWh
- Location: NUID canal near Madras
- Initial operation: April 2013
- Commercial operation: Sept. 2013
- Proposed incentive: $450,000

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Project team, ownership structure

- Developed by Natel Energy, Inc.
- NUID may participate in ownership
- Project ownership reverts to NUID after 20-25 years

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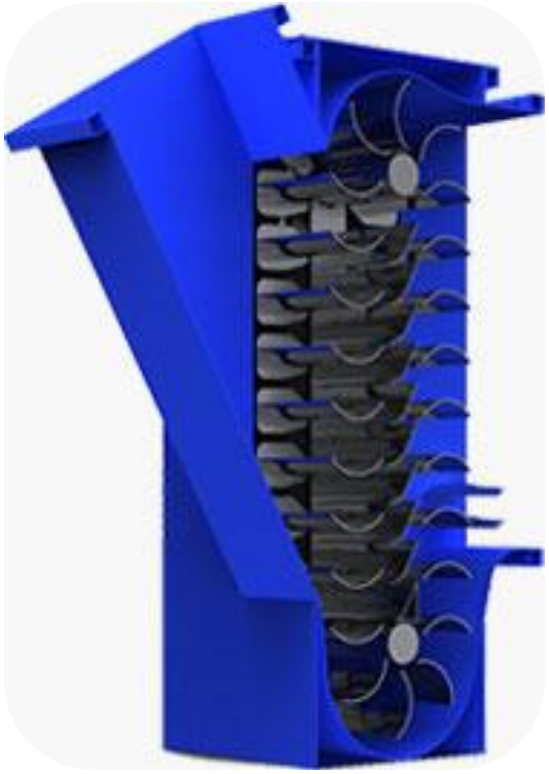
Resource / Technology Evaluation

- New turbine technology to capture energy at ultra low head sites more efficiently .
- 88% efficiency according to Natel.



Resource / Technology Evaluation

- ~12’ of head
- Flow at site averages 381 cfs.
- Turbine requires 266 cfs.
- Water shortages very rare at NUID, project is buffered as it utilizes only 70% of *average* flows.
- Generation: ~822MWh annually.

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Development schedule

- Design
- PPA
- Interconnection
- Permitting

Financial summary (NPV basis)

Revenues	Power Sales	$	518,869
	ITC Grant	$	231,568
	US DOE Grant	$	345,618
	NPV Total Revenue	**$**	**1,096,055**
Costs	Capitalized Cost	$	1,117,510
	Operations Expenses	$	84,819
	Maintenance Expenses	$	78,180
	Other Expenses	$	82,310
	Taxes	$	34,914
	NPV Total Project Cost	**$**	**1,397,733**
Above Market Cost (Total Revenue - Total Project Cost)		$	(301,678)
	Tax Benefits	$	23,971
	Net Above Market Costs	$	(277,707)
	Above Market Cost After Tax Adjustment	**$**	**(450,502)**

Proposed incentive

- Pay quarterly on production 25 cents per kWh up to $450,000
- Covering 80% of the above-market cost
- ETO will take the first 15,000 RECs (91%)
- Project breaks even in year 10

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Comparison with other projects

Project	$ million/aMW
Central OR Irrigation District	$ 652,028
Klamath Irrigation C-Drop	$ 1,228,154
Earth by Design 45 Mile	$ 1,491,064
Three Sisters Irrigation District	$ 2,825,806
Swalley Irrigation District	$ 2,916,985
Farmers Irrigation District	$ 3,767,742
Monroe Drop - Natel / NUID	**$ 4,184,713**

Risks and Strengths

Risks:

- Technology
- Interconnection speed / cost

Strengths:

- Team dedicated to the technology
- Potential new market segment

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Next Steps

- Board Authorization

  May 23, 2012

- Milestones

- Contract Negotiations

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