



**NW Natural**  
**GAS STORAGE**

**LDC Gas Forum - Rockies and West**  
**“New Projects for the West”**  
**October 2010**

# Today's Overview

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- **Two Projects**

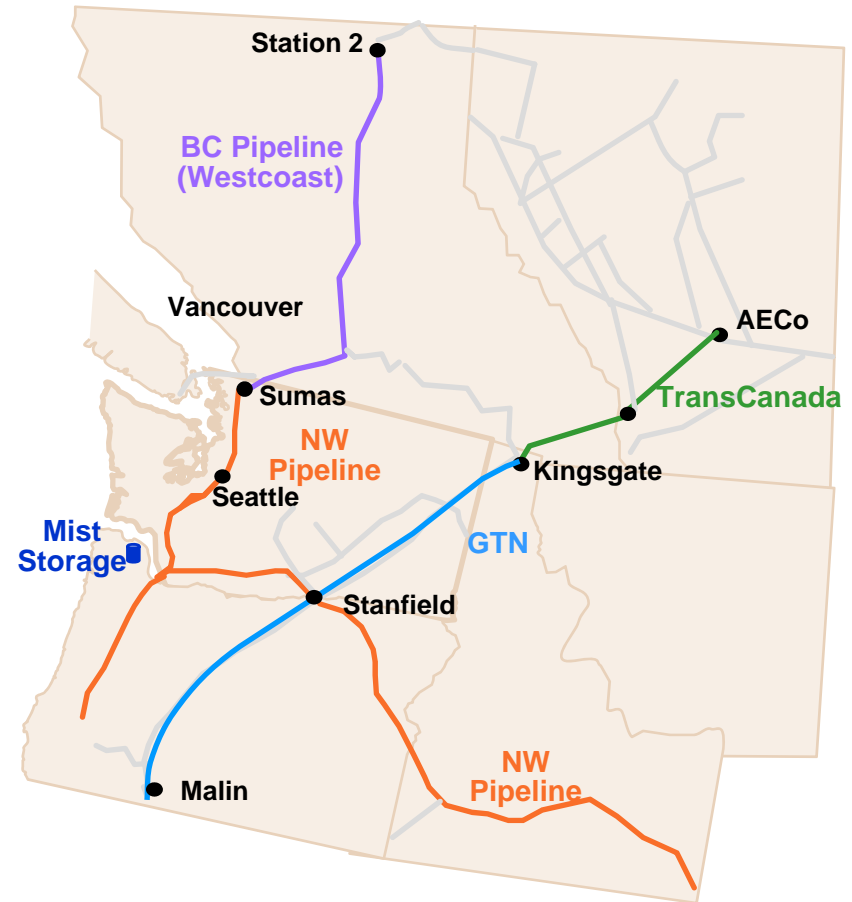
- Mist, Oregon – storage short market (Sumas)
- Gill Ranch, California – third independent storage business

- **NW Natural Gas Storage, LLC (NWNGS)**

- Formed last year to hold and develop western storage assets
- 100% subsidiary of NW Natural
  - NW Natural is mid-cap LDC serving nearly 800,000 customers in Oregon and SW Washington
  - Based in Portland, OR
- NWNGS
  - Manages all commercial and development aspects of Mist
  - Will manage all aspects of Gill Ranch
    - Subsidiary: Gill Ranch Storage, LLC will operate for two owners (GRS 75%/PG&E 25%)
    - Market GRS' 75% of capacity
  - Based in Portland, OR

# Mist and the Northwest Infrastructure

- **Serves the greater PNW**
  - OR, WA, ID, BC
- **Access to interstate market via NW Natural's distribution system**
  - Mist is 25 miles from Northwest Pipeline
- **"I-5 Corridor" in-market storage**
  - Along with Jackson Prairie
- **Customer mix:**
  - LDC's
  - Marketers
  - Power generators



# Mist Commercial Structure

- **Two markets served with single set of facilities**

- Core (OPUC regulated)
- Interstate (FERC 284 regulated)

- **Shared facilities**

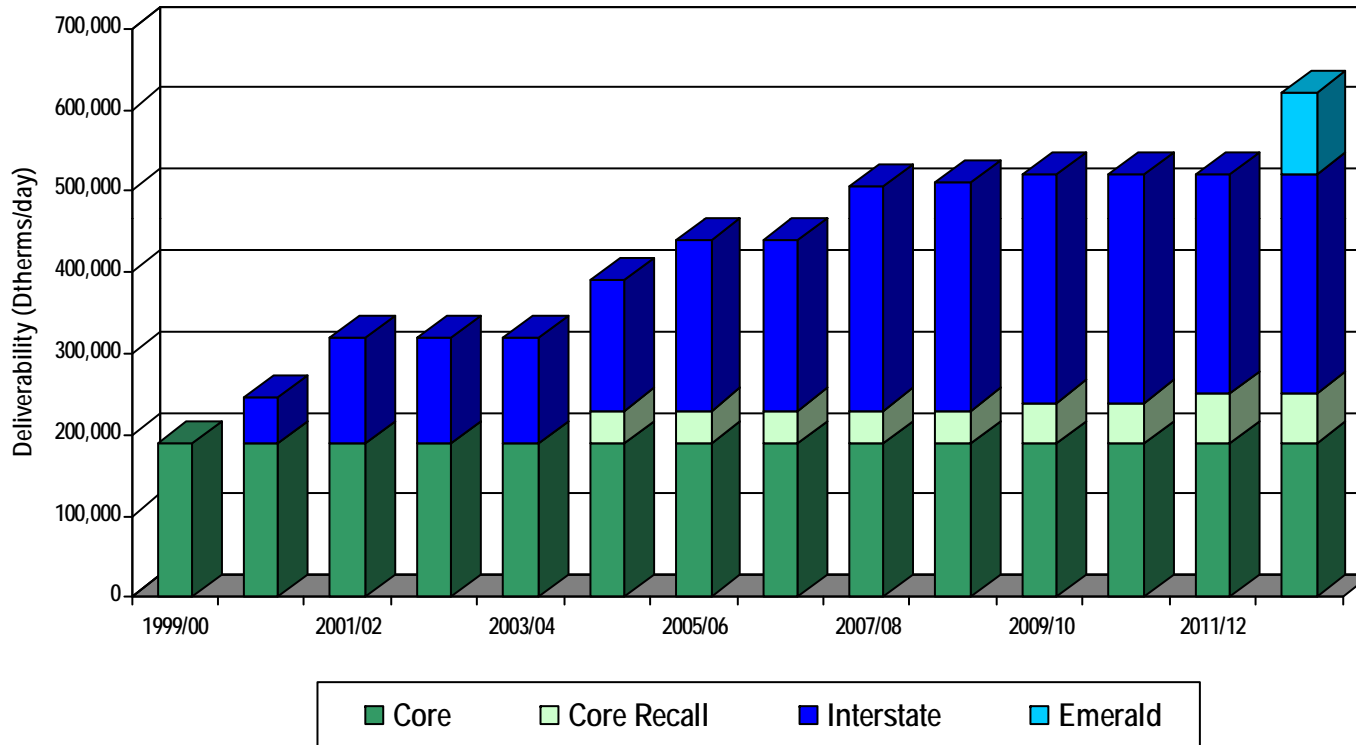
- NWN's utility transmission used for ingress/egress
- Compression, reservoirs and gathering tend to be separate, limited sharing
- Utility compensated with a sharing mechanism from interstate revenues

- **Operations**

- Facilities operated jointly as single storage field
- Core and Interstate have equal “priority” to firm service



# Integrated Mist Development



# Emerald Expansion

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- **NWN's fifth Mist expansion since 2000**
- **All new capacity developed for the interstate market**
  - 3,500,000 Dth of inventory
  - 100,000 Dth/d of withdrawal capacity
  - 40,000 Dth/d of injection capacity
- **New facilities**
  - Two new reservoirs
  - All nine pools operated as single unit for average 2.5 turn service
  - New, second compression station
- **Primary receipt/delivery points on NWPL**
  - Deer Island (mainline)
  - Molalla (Grants Pass lateral)
  - Both located in NWPL "Mist pool"
- **Target Commencement: May 1<sup>st</sup>, 2012**

# Mist Post-expansion



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	Working Gas (Bcf)	Deliverability (Dth/d)
Existing Interstate	7.0	270,000
Emerald Expansion	<u>3.5</u>	<u>100,000</u>
Sub-total Interstate	10.5	370,000
Core	<u>9.0</u>	<u>250,000</u>
Field Total	19.5	620,000

# Gill Ranch and the California Infrastructure

- **Located in central California about 20 miles west of Fresno**

- Market area storage
- Close to loads and interconnects
- NW Natural Gas Storage, LLC's interest will be held by 100% owned subsidiary Gill Ranch Storage, LLC (GRS)
- GRS is operator and holds 75% interest in field; PG&E holds remaining 25%

- **Close to PG&E's backbone transmission**

- Approximately 25 miles to PG&E Line 401

- **Depleted dry gas field with multiple prospective storage zones**

- Develop in phases
- Phase I up to 20 Bcf
- Additional development function of market demand



# Gill Ranch – Construction/Development Update

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- **Construction 100% complete**
- **Commissioning over 80% complete**
  - Withdrawal equipment will be last (dehy, line heaters, etc); expected late Nov/early Dec
- **Line pack in-place**
- **October 1<sup>st</sup> injections began (blend of working and base)**
- **In general, project completed on budget and on time**

# Commercial Status

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- **Contracting plan**

- October 2010
  - Partial storage year; Limited inventory and deliverability capacity (11 Bcf)
  - Primarily 2010/2011 winter spread deals only
  - Placing enabling agreements now
- April 2011
  - Full storage year contracting (17 Bcf)
  - Solid base of firm contracts in place
  - Expect to complete contracting this fall

- **Tariff approved by CPUC 4/16/10 available**

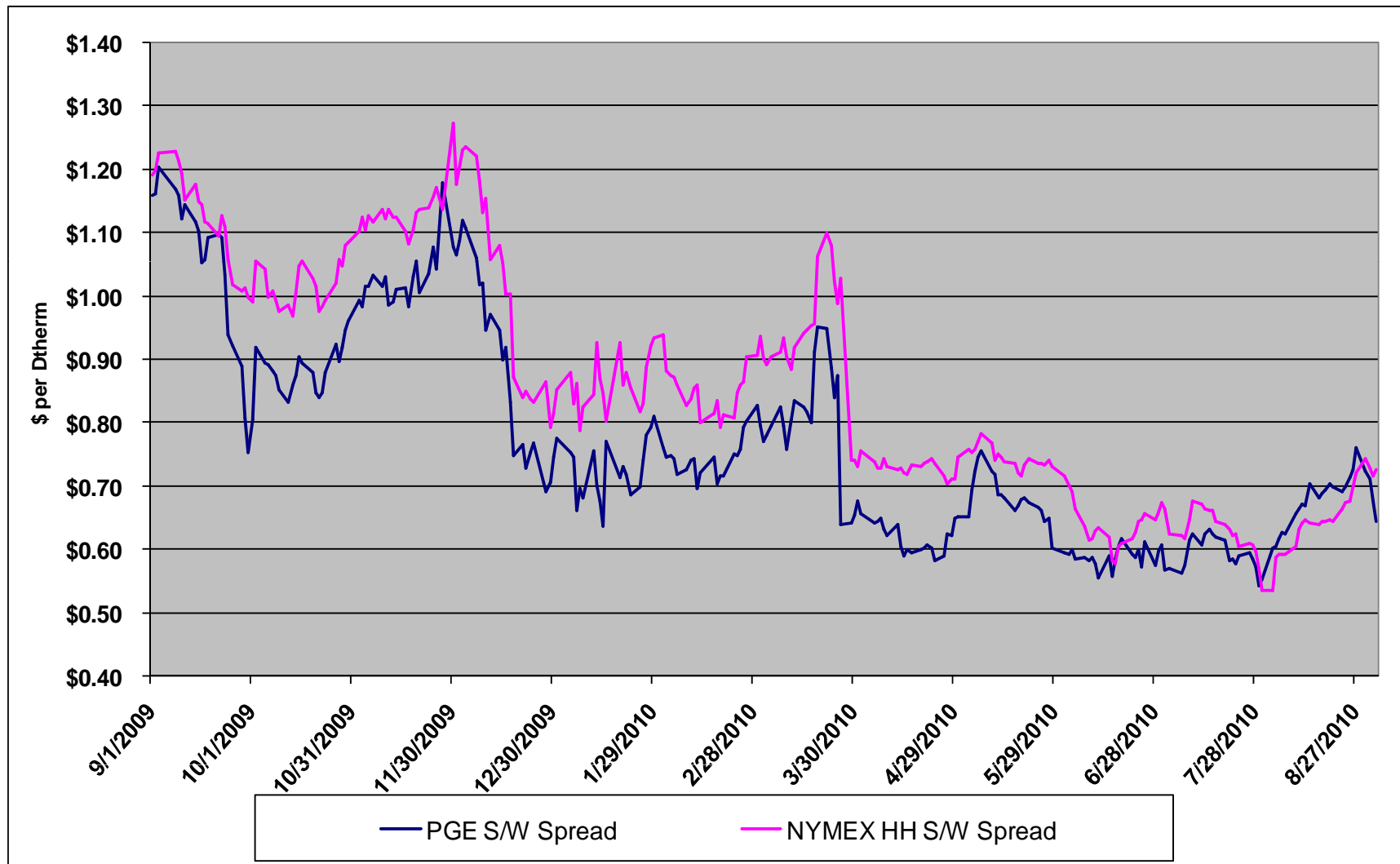
- **Project attributes are compelling**

- Excellent location
- High cycling facility (up to 3.0 turns)
- Uncomplicated, depleted reservoir
- Strong sponsors
- Experienced development staff

# Storage spreads remain soft, but California has improved relative to NYMEX



## NYMEX Henry Hub and PG&E Summer Winter Storage Spreads



# Contact Information

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