NYISO Credit Policy Proposal

Agenda #10

(This proposal was presented to the Management Committee on April 17, 2002)

Section I – Approach / Historical Update

Section II – Goals / Objectives / Major Components

Section III – Relevant NYISO Market Statistics

Section IV – PwC Involvement / Best Practices / Benchmarking

Section V – Loss Sharing Formula

Section VI – Delegation of Authority / Credit Limit Determination / Four Tests

Section VII – Next Steps

NYISO Credit Policy

NYISO Credit Policy Working Group

Sector Representatives

Sector	Name	Company
Transmission Owners	Patricia Douglas	Con Edison
	Kay Spellane	Rochester Gas & Electric
Generators	Scott Nelson	Sithe
	Brad Radimer	PSE&G
Public Power	Jim Parmalee	LIPA
	Tom Rudebusch	MEUA
Other Suppliers	Al Babp	PP&L
	Jeff Dryja	AES
End Users	Aaron Breidenbaugh	Navigant
Chairman	Andy Ragogna	NYISO
Advisors	Shyam Venkat	PricewaterhouseCoopers
	Charles Andrews	PricewaterhouseCoopers

NYISO Credit Policy
Approach

- **Intense Collaboration with Market Participants**
  - *Established Credit Policy Working Group*
  - *One Year*
- **Analyzed Market Concentration Statistics**
  - *Market Share – TOs / Rated / Unrated*
    - Load
    - $ Volume
  - *Collateral Held*
  - *Spot Market Activity*
  - *Loss Probabilities*
- **Traditional Benchmarks**
  - *Debt Ratings / Loss Probabilities*
  - *Net Worth / Size and Equity*
- **Proactive**
  - *Liquidity Analysis*
  - *Prospective vs. Historical*
  - *Evolving Trend / More Disclosure*
- **Balanced Approach**
  - *Financial Statistics*
  - *Risk*
  - *Need*
- **Non-Discriminatory**
  - *Addresses Current Needs*
  - *No Unfair Barrier to Entry*
- **Prudent**
  - *Good 1st Step*
  - *Young Market*
  - *Dynamic*
  - *Will Change as Market Evolves*
- **Expert Advice / Oversight**
  - *PwC Involved from Day One*

S & P Corporate Ratings Criteria

"Bear in mind, though, that a rating is, in the end, an opinion. The rating experience is as much an art as it is a science."

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II. Goals / Objectives / Major Components

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<u>Goals</u>

- **<u>Minimize Losses Due To Default</u>**
  - *Reasonable Risk*
  - *Not "Zero" Risk*

- **<u>Support Development of Competitive Markets</u>**
  - *Wholesale and Retail*
  - *Non-Discriminatory*

NYISO Credit Policy

Objectives

- **Eliminate Unlimited Credit for Rated Entities**
  - *Establish specific unsecured credit limits for each Market Participant*
- **Eliminate Payment History Waivers**
  - *Existing*
  - *Future*
- **Eliminate Tariff Ambiguities**
  - *Clearer Guidelines*
  - *Default and Termination*
  - *ICAP + TCCs*
- **More Equitable Risk Sharing**
  - *Losses*
  - *Contingency Reserve*
  - *Insurance*
- **Enhanced Daily Credit Management**
  - *Defined Approach*
  - *Credit Manager Discretion within Limits*
  - *Internal Credit Scoring*
  - *Prospective Liquidity Analysis*
  - *Internal NYISO Credit Committee*
  - *CPWG Oversight (Market Participants)*

NYISO Credit Policy

Loss History and Liquidity Assurance Components

- **No Losses in 2 Years**
- **Bills Paid On-Time**
  - *February / March 2000 Operating Reserves*
  - *Two Summer Peak Periods*
- **$950 Million Collateral**
- **$50 Million Contingency Reserve**
- **$50 Million Revolving Credit Line**
- **$50 Million Insurance**

Actual Experience

Currently in Place

NYISO Credit Policy

Significant Enhancements to be Realized

I. Major Structural Changes – Particulars provided today

Enhancement	Primary Beneficiary
Eliminate Unlimited Credit Authority	All Market Participants
More Equitable Loss Sharing	TOs and Non-TO LSEs

II. Other Structural Changes – Particulars to be provided in FAP prior to Tariff Filing

Enhancement	Primary Beneficiary
Internal Rating For Unrated Entities	Non-TO LSEs
More Structured / Defined Credit Management Process	All Market Participants

Financial Assurance Policy

- **The Financial Assurance Policy will provide additional details and particulars**
- **Including but not limited to:**
  - *ICAP Collateral specifics*
  - *TCC Collateral specifics*
  - *Liquidity Analysis specifics*
  - *Issuer Rating vs. Long-Term Unsecured Rating*
  - *Fitch = Qualified Rating Agency*
  - *Appeal Process*
  - *Definition of Tangible Net Worth*
  - *Credit Committee Composition*
  - *Penalties for Refusal to Pay*

NYISO Credit Policy

III. Relevant NYISO Market Statistics

NYISO Credit Policy
Billing History / Transaction $ Volume

I. Gross Revenues

	2002	2001	2000	1999	Total
Energy	$239.6M	$4,628.3M	$4,581.1M	$246.9M	**$9,695.9M**
ICAP	$47.9M	$765.1M	$422.1M	---	**$1,235.1M**
TCC	$0.0M	$78.0M	$270.0M	$0.2M	**$348.2M**
Total	**$287.5M**	**$5,471.4M**	**$5,273.2M**	**$247.1M**	**$11,279.2M**

NYISO Market Participants Receivables Statistics 2001

- **# Monthly Net Receivables Participants**

  July – 44
  Aug – 53 Average Approximately 50
  Sept – 48

- **Average Total Monthly Net Receivable $**
  - *$2.7B through Sept. 2001 ¸ 9 months = $300M/Month*
  - *Excludes ICAP & TCC Auctions*
  - *Excludes Virtual Trading*

- **Breakdown of Monthly Net Receivables**

# Receivables Participants/Month	$ Million/Month	Percentage
8 Transmission Owners	225	75
30 Collateralized	63	21
10 Rated/No Collateral	12	4
48 Total Participants	300	100

- **The 30 Collateralized Market Participants have posted $400M of collateral; energy only.**
  - ***Total collateral held = approximately $950 M; all products*.**

NYISO Market Participants
Exposure Statistics - 2001
“Includes ICAP Auctions”

Breakdown of Rated Entities – No Collateral – Excluding 6 TOs/LIPA/NYPA

#	Peak Billing Cycle ($ Million/Month)
1	10
2	1-5
7	< 1
10	

Breakdown of Collateralized Entities - Unrated

#	Peak Billing Cycle ($ Million/Month)
3	50-65
2	10-20
5	1-10
20	< 1
30	

NYISO Credit Policy

IV. PwC Involvement / Best Practices / Benchmarking

PricewaterhouseCoopers has been engaged since February 2001 to assist the NYISO in the assessment and development of its credit risk management policies:

- **Reviewed proposed changes in the NYISO credit contingency reserves, limit setting methodologies and general credit risk management polices and procedures**
- **Developed expected and unexpected loss estimates**
- **Advised NYISO staff and participated in discussions with the Credit Policy Working Group in the development of credit policies for virtual bidding**
- **Worked with various market participants to facilitate development of credit risk management policies for delegation of credit authority and loss sharing**
  - Facilitated all Credit Policy Working Group meetings
  - Conducted interviews with transmission owners and representatives from other participant groups
  - Benchmarked credit limit setting methodologies through an informal survey of between 7-10 energy trading companies and several banks
  - Researched loss sharing arrangements at other ISOs, power pools and exchanges
  - Evaluated other market structures as a point of reference for the NYISO's policies and procedures

Over the course of several months, PwC identified a number of key findings for NYISO to consider to achieve best practice credit risk management standards

- **PwC's benchmarking of credit risk management practices at Energy Marketing & Trading Entities shows that matrices are not used in isolation when setting credit limits or delegating credit authority**
- **PwC's benchmarking of financial institutions shows a significant difference in the delegation of credit authorities to senior credit officers primarily due to their significantly greater capitalization and role in the economy**
- **PwC confirmed that due to the unique structure of entities in different sectors an alternative to TNW thresholds for municipals, cooperatives and agencies cannot be standardized**
- **PwC's benchmarking of loss sharing among other ISOs reveals that there is no one standard although pro-rata sharing is more common than segmentation of losses**

PwC's benchmarking of credit risk management practices at energy marketing & trading entities shows …

Category		Company A	B	C	D
Credit Limit Matrix	**Counterparty Categorization**	Yes; more favorable limits for TOs and tighter limits for municipalities		No favorable treatment for TOs; all are based on credit analysis	Yes
	External Ratings	S&P	S&P, Moody's	S&P, Moody's	S&P, Moody's
	Internal Scoring Model	Yes; mapped with external ratings; based on both quantitative and qualitative factors	Yes; mapped with external ratings; based on both quantitative and qualitative factors	Basic; close to consumer lending model; heavy reliance on external ratings. Models for different industries are being constructed.	Ratio analysis; rating 1 to 10 mapped with external ratings; based on both quantitative and qualitative factors
	TNW as Sizing Factor	Yes, not as threshold	More focus on liquidity		More focus on market cap
	Other Factors	Cash flow, debt ratio, etc.	Working capital, facilities with banks, access to market, present in the business; cash flow, etc.	Tenor Matrix: <2 years for analyst, 2-4 years for Credit Manager and Director, >5 years for Chief Credit Risk Officer	Firm's own risk appetite
Limits for an "A" Rated Counterparty		Depends on levels of authority: $5 – 70 million (signed by VP)	$100 – 200 million	$0-50 million for analyst, $50-80 million for Credit Manager, >$100 million for Director, >$150 million for Chief Credit Risk Officer	
EEI Contract		Yes		Yes	Going into
Collateral		Aggregate limits as threshold			Yes; cash and LC from minimum "A" rated banks
Parental Guarantee			"Bottom up analysis": credit analysis on the affiliate, then the parent company; rating substitute is not automatic		Not much as collateral

… that matrices are not used in isolation when setting credit limits or delegating credit authority

Category		Company E	F	G	H
Credit Limit Matrix	**Counterparty Categorization**	No specific model for municipalities and coops			
	External Ratings	S&P, Moody's	S&P, Moody's	Yes, D&B not useful	S&P, Moody's
	Internal Scoring Model	Yes; S&P equivalents; based on both quantitative and qualitative factors; no specific model for municipalities and coops	Yes; S&P equivalents	Financial ratio analysis; only one subjective factor with <10% weight	Yes; based on both quantitative and qualitative factors
	TNW as Sizing Factor	Adjustment on TNW when appropriate: examine the nature of goodwill before deduction; book equity is preferred over market cap	Typically <5% of equity	Initially used 10% of TNW, but things get skewed and numbers became too high for large companies	TNW is used but our own risk appetite is more important.
	Other Factors	Size, solvency, etc.	Purchasing volume, overall business, contractual rights, human judgement	Position in the industry, recent news, annual report, and our own risk appetite	Our own risk appetite
Limits for an "A" Rated Counterparty		\$50 – 100 million; 5% of TNW	Up to \$50 million for credit manager with 1 year tenor; delegation also available for 5 and 10 years of tenor		
EEI Contract		Yes			
Collateral		Not strictly required between BB+ and BB; required for BB- and below		Collateral required for non-investment grade, usually a L/C. Other forms are parental guarantees, pre-payment and partial monthly payments margin accounts. Surety bonds are avoided. Municipals and some private firms might have exceptions based on financial analysis.	Collateral is required for all counterparites that do not provide financials
Parental Guarantee		Analyze the affiliate independently, and also the parent company			

PwC's benchmarking of financial institutions shows a significant difference in the delegation of credit authorities to senior credit officers*, primarily due to their capitalization and role in the economy

Credit Authorities ($Million)					
External Rating	**Internal Rating**	**Bank A**	**Bank B**	**Bank C**	**Bank D**
AAA	**1**	500	2,400	1,200	250
AA	**2**	300	1,800	1,200	250
A	**3**	200	900	1,000	250
BBB	**4**	75	600	800	75
BB	**5**	75	300	500	75
BB-	**6**	50	120	300	30
B	**7**	20	50	50	10
> CCC+	**8 to 10**	0	50	25	5

*Generally a Managing Director, Business Group Credit Officer

PwC found that due to the unique structure of entities in different sectors an alternative to TNW thresholds for Municipals, Cooperatives and Agencies cannot be standardized

- **Reviewed Moody's, S&P and Fitch IBCA commentary/ratings approaches for the energy & utility sectors as well as sub-sectors such as municipal owned utilities and cooperatives.**
- **Due to the differences in structure among various sectors there does not exist any particular standard as a proxy for TNW or "equity capital".**
  - *Many cooperatives have shareholder's equity and retained earnings.*
  - *State agencies have "accumulated net revenues employed in the businesses" or "retained earnings (accumulated deficit)".*
  - *Municipalities have general fund balances which are sometimes classified as "Equity, retained earnings and fund balances". Industry convention is to focus on general fund balances.*
    - Reserved or unreserved
    - Designated or undesignated
- **NYISO's market participants in these sectors are significantly different in their size, financial characteristics and creditworthiness.**

NYISO Credit Policy

V. Loss Sharing Proposal

PwC's benchmarking of loss sharing among other ISOs reveals that there is no one standard although pro-rata sharing is more common than segmentation of losses

Exchange Services and System Operators	**Structure of Loss Sharing**
Arizona Independent Scheduling Administrator	Not available
California ISO	Pro-rata loss sharing by all creditors
California Power Exchange	Pro-rata loss sharing by all other debtors
ISO New England	Pro-rata receivables/payables basis
Mid-continent Area Power Pool	Pro-rata sharing among net users/owners of transmission services, not yet determined for "balanced energy" market
Midwest ISO	Pro-rata to TOs based on their share of transmission service receivables to defaulting counterparty
Ontario Independent Market Operator	Shared amongst participants based on dollar amounts of purchases and sales during the month of default via a "default levy"
PJM Interconnection	Charge fees on membership. All members share losses including generators: 10% on number of members, 50% on peak demand, 20% on generating capacity, and 20% on circuit miles of transmission facilities multiplied by the respective operating voltage

Loss Sharing Formula

- **% Loss for MP = $\dfrac{\text{MP (Gross A/R + Gross A/P) in month of loss}}{\text{NYISO (Gross A/R + Gross A/P) in month of loss}}$**
- **Gross A/R and Gross A/P includes Energy, ICAP and TCC Activity**

Current Structure Percentage Based on Loads Usage			**Proposed Structure Percentage Based on Accounts Receivables and Accounts Payable***	
TOs	90%		TOs	54%
TO Affiliates	6%		Generators	25%
Non-TO LSEs	4%		Others	21%
Total	100%		Total	100%

* The data listed here is based on A/R and A/P from March, 2001 to May, 2001 only.

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VI. Delegation of Authority / Credit Limit Determination / Four Tests

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Product Differentiation

I. Products

a. *Energy*
b. *ICAP*
c. *TCCs*
d. *Virtual Transactions*

II. Different Collateral Requirements for Each Product

a. *Assessment of specific risk associated with each product*
b. *Dynamic: Will evolve / change over time*
c. *Initially: Conservative*
d. *Revise: Based upon actual experience*

NYISO Credit Policy

Product Differentiation

	Current Collateral Required	Proposal
Energy	Highest Three Months in Rolling Twelve Months	No Change
ICAP	Amount of Bid for duration of Purchase / Declining Balance	Possibly Reduce / Legal Assessment re: Asset Pledge
TCC	Amount of Bid for Life of Contract / No Declining Balance	Possibly Reduce / Analysis of Historical Volatility and Risk Exposure
Virtual Bidding	7 x Highest Price Spread observed @ 97 percentile in last 90 days	No Change / Review at End of Capability Period (4/30/02)

NYISO Credit Policy

Application of Credit Limit

- **Each Market Participant will have an Unsecured Credit Limit**
  - *Approved Unsecured Credit Limit can be "0" or greater than "0"; but not infinity*
  - *No Collateral required up to the Unsecured Credit Limit*
    - For cumulative billed and unbilled exposure:
  - *Collateral required for exposure above the Unsecured Credit Limit:*
    - Based upon sum of individual Product Market Exposure

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Example: Application of Credit Limit

- **Given: Unsecured Credit Limit = $100K**
- **Example:**

Product Market	Exposure Calculation	$ Exposure	Credit Limit Allocation	Excess Exposure	Collateral Calculation	Collateral Required
Energy	Highest Billing Cycle** in 12mos. = $50K	$50 K	$20 K	$30K	2 x Excess Exposure (Provides for Continuing Exposure)	$60K
ICAP	Auction Purchases: 6 months @$5K/Month	$30 K	$30 K	- 0 -	1 x Excess Exposure	- 0 -
TCC	Auction Purchases: 5 years @$50K Total	$50 K	$50 K	- 0 -	1 x Excess Exposure	- 0 -
		$130K	$100K			

** Approximately 45 days Billed and Unbilled Exposure

Market Participant Determines Allocation

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Credit Limit Determination

- **Four Tests**

# 1 – Debt Rating	→	**Maximum Possible Credit Limit per Approved Matrix**	→	**Matrix cannot be changed w/o MC and BOD Approval (Possibly FERC)**
# 2 – Tangible Net Worth %	→	**Intermediate Credit Limit**	→	**Generally Lower Than Test #1** ♦ **Cannot be exceeded w/o Liquidity Analysis** ♦ **Minimum Reduction of 25% w/o Liquidity Analysis**
# 3 – Liquidity Analysis	→	**Maximum Recommended Credit Limit / Credit Manager**	→	**Can result in a Credit Limit above or below the Intermediate Credit Limit established in Test #2** ♦ Defined Range to be included in FAP
#4 – Need	→	**Assigned Credit Limit**	→	**Based Upon Level of Current Market Activity** ♦ **less than or equal to Credit Limit determined by Liquidity Analysis.**

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Liquidity Analysis

- **NYISO Credit Manager Conducts Interview with Market Participant**
- **Market Participant Provides:**
  - *"Officer" certified cash forecasts include working capital position*
  - *Assessment of unreserved cash availability*
  - *Copies of committed bank facilities*
  - *Assessment of various Liquidity Indicia/Criteria*
  - *Prospective and Historical*
- **NYISO Treats Information With Appropriate Confidentiality**

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<u>Minimum Credit Line for Municipalities</u>

- Proposal:
  - <u>Minimum Credit Line of $1M/Month</u>
    - »Subject to Liquidity Test Only
  - <u>Four Test Process Applicable above $1M</u>

- Typical Municipalities:
  - County of Erie
  - Freeport Electric
  - NYMPA
  - Rockville Center
  - County of Niagara
  - Jamestown
  - SMEC
  - City of Buffalo

- <u>Aggregate Average</u> <u>Aggregate Peak</u>

<u>**$$ Million / Month**</u>	<u>**$$ Million / Month**</u>
$2.5 M **	**$4.6 M****

- Highest Peak Month for an entity approximately $1.5M

** Energy Only, ICAP Insignificant

NYISO Credit Policy

Delegation of Authority

(1) Matrix may change as Market Share and Need Evolves

- Requires MC and BOD Approval

(2) Limits Represent "Up To" or Maximum Credit Limits

- Subject to TNW Test, and Liquidity Analysis, and Need Test

(3) Initially – Will not apply to Virtual Trading

Maximum Limits for Energy, ICAP Auctions & TCC Auctions (Aggregate)			
Debt Rating	Maximum Credit Limit TOs	Maximum Credit Limit Non-TO LSEs / TO Affiliates / Corporate Guarantees	TNW Credit Limit Applies to Everyone
External Rating/ Credit Scoring	($ Million) Monthly**	($ Million) Monthly**	% of Tangible Net Worth
AA-	500	100	7.5%
A+	450	90	7.5%
A	400	80	6.5%
A-	300	60	5.0%
BBB+	200	40	4.0%
BBB	125	25	2.5%
BBB-	75	15	1.5%
Below BBB-	-0-	-0-	-0-

** Multiply by 1.5x for billing cycle exposure (billed & unbilled)

NYISO Credit Policy

Differentiated Credit Authority
Regulated LSEs (TOs) vs. Unregulated LSEs

- **TOs are regulated entities**
  - *Significant Pass Through Capability*
  - *Currently serve 90% of load / major market share*
  - *Non-discretionary product*
  - *Highly certain cash flow*
  - *Cannot engage in unrelated speculative business risks*
  - *Retail Access Transition = Slow*
- **TOs are providers of last resort**
  - *Obligated to serve load if a non-TO LSE defaults*
- **PSC has a vested interest in competition**
  - *Competitive Opportunities Act*
  - *Divest Generation*
  - *Open Access Transmission*
- **Two years perfect payment history**
  - *Feb/Mar 2000 operating reserves*
  - *Summer peaks*
- **More insurable than Non-TO LSEs**
  - *Have $50M in Insurance*
  - *Higher Limits Available*
  - *Insurers perceive TOs as lower risk*
- **Better bankruptcy history than Non-TO LSEs**
  - *California*
  - *PSNH / Seabrook Nuclear Plant*

- **Not Discriminatory / Not an Unfair Barrier to Entry**
  - *Meets Current Market Participants needs*
  - *Rated Entities: BBB- Rating Satisfies current need*
  - *Unrated Entities: Relaxes a perceived barrier to entry / competitive disadvantage*
    - Can get an unsecured limit / Credit Scoring / Liquidity Analysis

NYISO Credit Policy

VII. Next Steps

NYISO Credit Policy
<u>Future</u>

- **Evolve with New Products**
- **Evolve with Experience**
- **Conform all ISOs over time**
- **Shortened Billing Cycle**
  - *Eliminate 24-Month Final Bill*
  - *Implement 4-Month Final Bill*

  This Year!

  - *Real-Time Settlement is the "End-State Vision"*

NYISO Credit Policy

Go Forward Plan

➢ **Management Committee**	**April**
➢ **Board of Directors**	**April**
➢ **Financial Assurance Policy**	**March/April**
➢ **FERC Filing**	**May**
➢ **Implementation**	**Phased In by December 31 pending FERC Approval**