The Missing Link: Transforming Deep Retrofits Into Financial Assets

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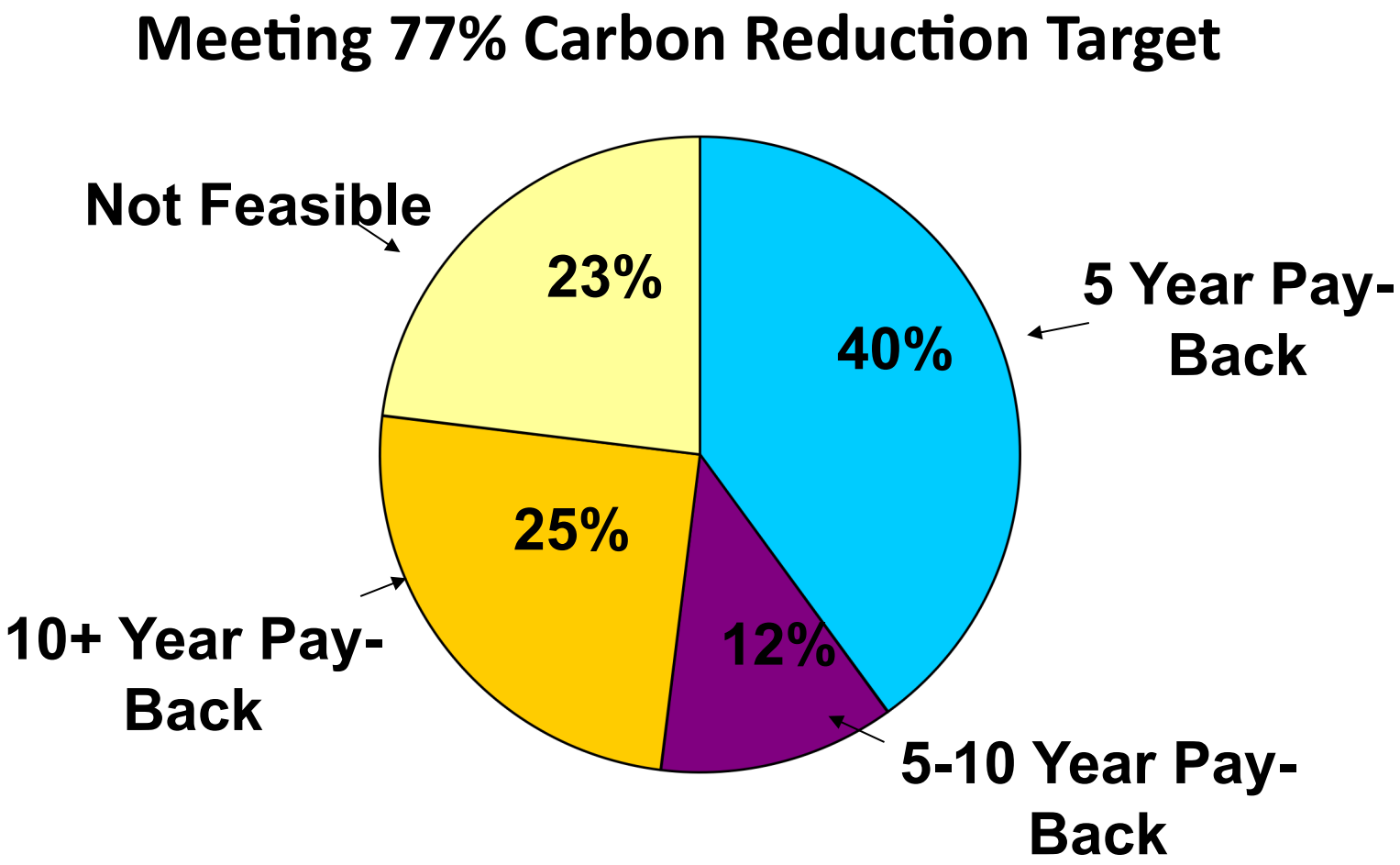
Outline/Agenda

1. EE & Sustainability Key to Energy Future
2. EE Insufficient Motivator—Need All Value
3. Market Changes Create DRV Opportunity
4. The Missing Link: RMI's DRV Methodology
5. Property Application & Financial Impact

EE & Sustainability Key to Secure Energy Future

1. Buildings Huge Energy Consumers
2. Energy Demand Accelerates
3. Energy Supplies Volatile & Uncertain
4. Climate Change Pressure Grows

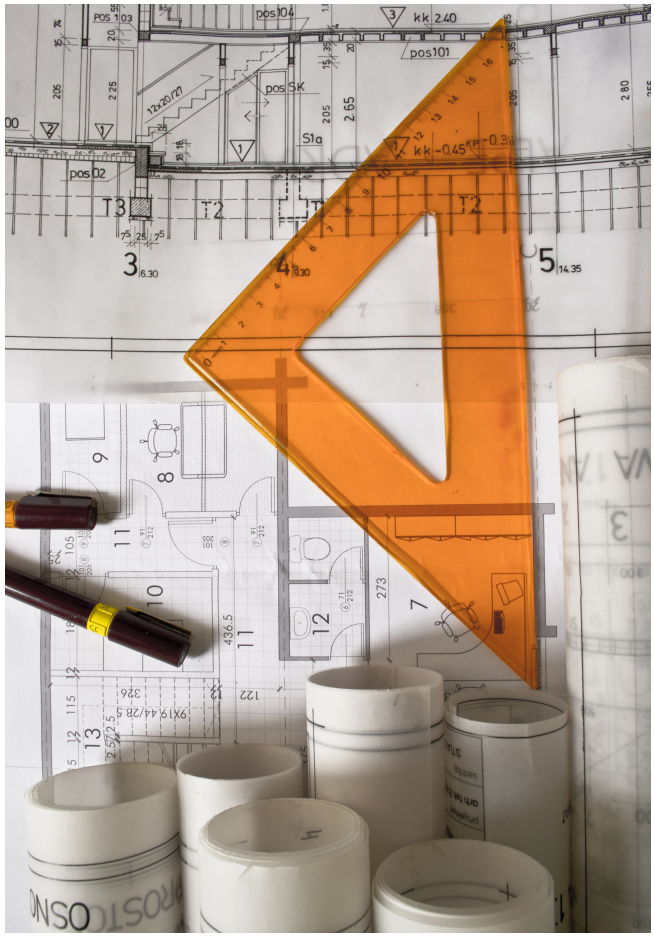
Energy Cost Savings Not Sufficient to Meet Global Climate Targets



Source: Adapted from "Energy Efficiency in Buildings, Transforming the Market," World Business Council for Sustainable Development.

Energy Cost Savings Insufficient Motivator for Occupants

1. Rental cost
2. Retention of key staff
3. Lease flexibility
4. Space efficiency
5. Higher quality environment
6. Occupational flexibility
7. Proximity to public transport
8. Proximity to clients/competitors
9. Higher building profile
10. **Energy efficiency**



Source: Knight Frank - Central London Occupiers –
100 Firms, 40,000 Employees, 10 Million Sq Ft, 20+ Year Presence

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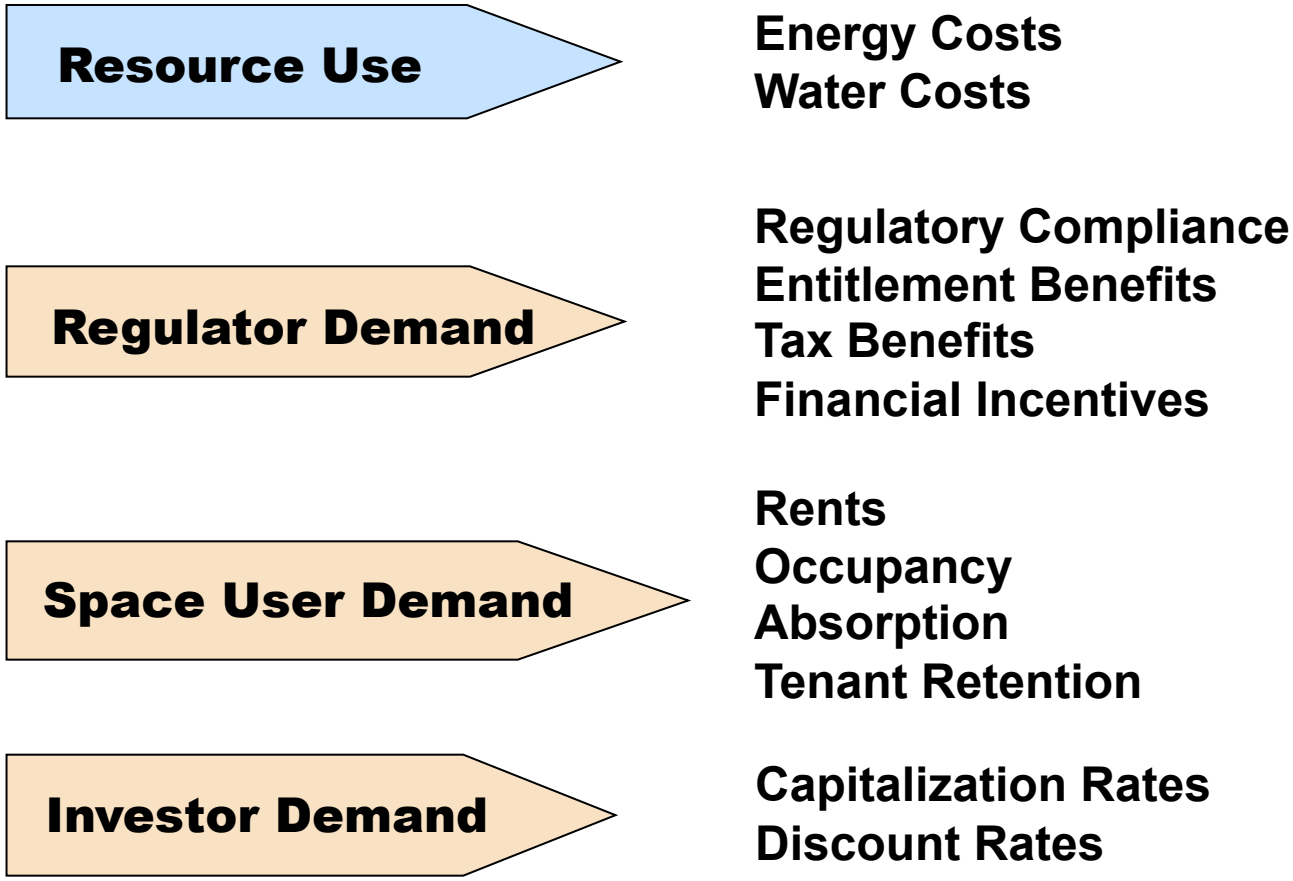
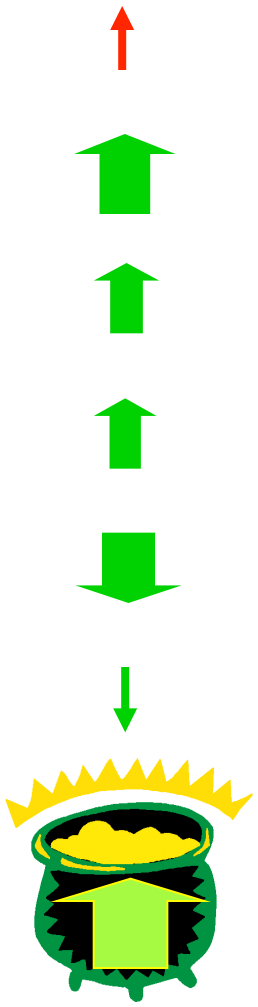
Energy Cost Savings Insufficient
VBECS are Real



Complete Assessment of Deep Retrofit Value Needed

1. Development costs
2. Regulator demand up
3. Space user demand up
4. Investor demand up
5. Operating expenses down
6. Capital expense down
7. “Net” risks positive



Market Changes Create Deep Retrofit Value Opportunity

1. Sea Change in Occupants and Investors in Last 7 years
2. Businesses & Properties Measured
3. EE & Sustainability Can Now Compete for Equity
4. Retrofits Emerge as Strategic Financial Asset

Market Changes Create DRV Opportunity
Non-Energy Factors Critical

1. Energy Costs- 93%	6. New Revenues- 80%
2. Customer Demand- 87%	7. Regulation- 73%
3. Brand Risks- 87%	8. Investor Eng.- 65%
4. Shareholders- 86%	9. External Rankings- 64%
5. Competition- 81%	10. Raw Materials- 56%

Source: Six Trends in Corporate Real Estate, E&Y, Greenbiz, 2012

Market Changes Create DRV Opportunity

Customers Assert Sustainability Demand

Individuals

- 71% consider environment when making purchases

Businesses

- Wal-mart to buy 70% from suppliers using sustainability index by 2017
- 83% of respondents working with suppliers on sustainability measurement

Governments

- E. O. 13514 requires 95% of new GSA contracts to be green

Market Changes Create DRV Opportunity

Top 10 Risks for Global Business

1. **Regulation & Compliance**
2. **Cost Cutting**
3. **Managing Talent**
4. Pricing Pressure
5. **Emerging Technologies**
6. **Market Risks**
7. Expansion of Gov. Role
8. Slow Recovery
   Double Dip Recession
9. **Social Acceptance Risk CSR**
10. Access to Credit

Source: 2012 Ernst & Young Business Risk Report, "The Top Ten Risks for Global Business" . Over 700 companies interviewed.

Market Changes Create DRV Opportunity

Water Enters Business Mainstream

1. Global Demand to Exceed Supply by 40% by 2030 (16 years)
2. 800 million-No Access; 3 million die each year
3. 80% of Fortune 500 Have Water Management Plans
4. 46% Report Water Related Losses—up to $ 1 billion

Market Changes Create DRV Opportunity

Building Health & Productivity Hot

1. Role of Buildings in Health & Prod. Emerges as Top Industry Issue

2. Hundreds of Studies Link Buildings to Improved Health & Productivity

3. Occupant Health & Well Being Now A Top Factor Motivating Sustainability Investment

Market Changes Create DRV Opportunity

Sustainable Finance Emerging

1. Five Years Overcoming Obstacles
2. Grants, Subsidies & Incentives
3. Property Assessed Clean Energy (PACE)
4. Utility On Bill Pay/Finance
5. Other Government Loan Programs
6. EPC's, ESA's and PPA's—Off Bal. Sheet

The Missing Link

RMI's Deep Retrofit Value Methodology

Owner Occupants

Property Costs & Risks 1. Retrofit Dev. Costs; 2. Non-Energy Op. Costs; 3. Retrofit Risk Mitigation; **Enterprise Costs** 4. Health Costs; 5. Employee Costs; 6. Promo. & Mkting Costs	**Enterprise Revenues** 7. Customer Access & Sales; 8. Property Revenues; **Enterprise Risks** 9. Enterprise Risk Mitigation

Key Advantages of New Methodology

1. All Value Considerations Addressed
2. Comprehensive Risk Identification/Analysis
3. Based on Traditional Valuation Practices
4. Separate Methods for Occupants and Investors
5. Evidence Based—Transparent
6. Ties Specific Retrofit Measures to Value
7. Flexible-Broadly Applicable Methodology

Financial Impact of DRV Analysis

- 1980's California Office Building
- 300,000 SF
- Owned and occupied by Engineering Co.--a large engineering firm:
  - revenues of $225 million
  - 1,500 employees
- Proposed retrofit targets 50% energy savings, and likely achieves at least LEED Gold.
  - Includes LED lighting, window film, daylighting, natural ventilation, and heat recovery

Financial Impact of DRV Analysis
Engineering Co. DRV Report Results

Before	After
ROI: 7.6%	**24% to 55%**
Payback: 13 Yrs	**6 months to 4 years**
NPV: -$2.25 Million	**+ $3.4 to $16.8 Million**
Risk: Not fully documented	**Complete-fully documented**

Source: "How to Calculate and Present Deep Retrofit Value for Owner Occupants", January 2014, Rocky Mountain Institute.

Deep Retrofit Value Calculations
Engineering Co. Building Retrofit

Value Element	Financial Impact	Summary
1. Retrofit Dev. Costs	($831,000) Dev. Cost Offset	$431,000 Cost Avoidance; $400,000 -Tax Credits, etc.
2. Non-Energy Op. Costs	($105,400) Annual Reduction	$60,000-Imp. Space Utilization; $9,000 (5%) Insurance Savings; $36,400 Reduced Maint. Costs.
3. Project Risk Mitigation	Significantly Reduced Return Hurdle Rate	27 Retrofit Best Practices; Green Due Diligence; & Traditional Risk Mitigation.
4. Health Cost Savings	($275,000) Annual Reduction	10% Drop in Absenteeism
5. Employee Cost Savings	($137,500) ($ 0 to $1,650,000) Annual Reductions	10% Improved Retention; 0 to 1.5% Productivity Imp.

Deep Retrofit Value Calculations
Engineering Co. Building Retrofit

Value Element	Financial Impact	Summary
6. Promo. & Marketing Costs	($0 to $450,000) Annual Cost Savings	Marketing Costs 10% of Rev.; 0 to 2% Cost Savings
7. Customer Access/Sales	+$0 to $112,500 Annual Earnings	0 to 0.5% Increase in Sales (or avoided loss); Annual Sales of $ 225 million; 10% Firm Profit Margin
8. Property Derived Rev.	NPV +$1,385,000 (Property Value)	4% Sales Price Premium; Assume Sale in Year 7
9. Enterprise Risk Mitigation	NPV +$867,500 Company Value	Earnings Multiple up from 3.0 to 3.1; Earnings of $22,500,000-given firm's 10% Profit Margin

Conclusions

1. Building EE & Sustainability Important
2. Retrofits Have Emerged as Strategic Financial Asset--Can Compete for Equity
3. Value and Risk Integration Key
4. Non-Energy Cost Benefits are Not “Soft”, “Indirect”, or “Non-Financial”

Questions?

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