



**Financing Sustainable Communities in
Urban & Rural Environments
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- ◀ Executive in Residence, Ohio University Voinovich School for Leadership and Public Affairs; Consortium for Energy, Economics and Environment (2006-current).
- ◀ Of Counsel, Thompson Hine, LLP.
- ◀ Just rated in 2012 Top Rated Lawyers Guide to Energy/Environmental/Natural Resources Law.
- ◀ Former Co-Chair, American Bar Association (“ABA”) Renewable and Distributed Energy Resources Committee (2008-10).
- ◀ Current Co-Chair ABA Energy and Environmental Markets and Finance Committee (2010-12).
- ◀ Member, Strategic Advisory Committee American Council on Renewable Energy (ACORE); Vice-Chair, Biomass Coordinating Council.
- ◀ Legal Advisor, Capital Markets Partnership for U.S. green building finance (2008-11).
- ◀ Moderator and Co-Editor or Contributor, *Ohio Energy Report (2006)*, *Ohio Manufacturing (2011)*, *Ohio Climate Change (2010-11)* and *Ohio Shale Energy Supply Chain (2012)*, Voinovich School, Ohio University.
- ◀ Member, USGBC Energy Atmospheric TAG Committee (2005-09); ASTM BEPA Legal Subcommittee (2009-10) on green buildings.
- ◀ Director, two terms at Power Generating, Inc. renewable energy company and other company advisory boards; Director and Chairman, Sphere E, LLC (2011 -).
- ◀ *Public Utilities Fortnightly*, Ground Breaking Lawyers Award (2009) for renewables and cogeneration work.
- ◀ Best rating in nation for *Martindale & Hubbell* (1989-2012) - highest rated for 20 years for legal quality and ethics.
- ◀ Rated in *Who's Who in International Project Finance Law*.
- ◀ Chapter author with Matthew Bender, Inc., Urban Land Institute, Government Institutes and ABA publications.



Sustainability Goals

- ▶ Treat governmental facilities' heating, cooling, and electric load as assets in community:
 - schools, public buildings, waste water treatment
- ▶ Citizens and local businesses achievement of sustainability goals; smartest and cheapest goal is efficiency
- ▶ Finance energy investments efficiently; develop new funding sources in future
- ▶ Economic development goals in community; energy, health, housing, telecom, and new economy
- ▶ Agricultural uses and opportunities



Decreases Should Focus On

- ◀ Energy use
 - Schools, buildings, buses
 - Building efficiency, operations
 - Systems engineering approach
 - Waste water treatment, waste management
- ◀ Reexamine energy use patterns:
 - Switching fuels, electric, NGV's, biofuels
 - Fuel purchasing strategies, aggregation of loads, payments in advance
 - Arbitraging fuel costs
 - Arbitraging time of day usage, demand side management and load management
 - Look at local fuels, supply, food options within 100 mile radius
 - Pre-purchasing gas and electricity for fixed costs to remove volatility
- ◀ Water usage, treatment costs with electricity
- ◀ Wastes management (recycling, biochar, wood/construction wastes)



Maximize Usage of:

- ◀ Existing infrastructure
 - Retrofit, repurpose, revitalize, first switch fuels
- ◀ Tax advantaged financing with stimulus incentives winding down since 2009
 - Investment tax credits
 - Production tax credits
 - Tax-exempt bonds
 - PPP's
- ◀ Environmental assets
 - State implementation plans (SIPs)
 - Renewable energy credits (RECs); emissions credits
 - Water production
- ◀ Demand response programs
- ◀ Distributed generation
- ◀ Individual smart metering; Smart grid and micro grids
- ◀ Industrial or renewables parks
- ◀ Waste water treatment, steam for heat/cooling
- ◀ Colleges/universities; community colleges



Ownership Models

- ◀ Direct governmental ownership
 - Simple option; funding v. financing distinction
- ◀ Special agency ownership
 - Municipal utility
 - Municipal authority
 - Government benefit corporation
- ◀ Public – private partnerships
 - Project finance
 - L3C's or L4C's?
 - Equity
 - Business ownership



Incentives

- ▶ Investment tax credits
 - Must achieve tax ownership for investors
- ▶ Production tax credits
 - Must be the “operator” of the facility
- ▶ “Refundable” tax credits through U.S. Treasury 1603 grant
- ▶ Tax-exempt finance
 - Government owned
 - Solid waste fuels
 - District heating and cooling
- ▶ Tax credit bonds
- ▶ New market tax credit
 - Low income, population areas
 - 29% of financing costs; lender needs special allocation
- ▶ Depreciation – treatment in PPP’s distinction



Project Finance

- ▶ Finance asset on its own revenues in special purpose entity
- ▶ Construction contract wrap by contractor
- ▶ Performance guarantees from operator, equipment vendor
- ▶ Third party ESCO's
- ▶ size, cost and certain scale limitations
- ▶ U.S., European banking pool
 - PPP experience with new model for financing rather than funding



Solar

- ◀ Government can purchase and own
 - Tax-exempt or tax-credit bond finance
- ◀ Third party vendor partnerships
 - Rooftop lease
 - Solar power purchase agreement
 - Leveraged lease or lease down structures for tax-equity
- ◀ Increasing interest and support by states RPS, utilities
 - Utility solar projects; solar parks with other renewables; RUS
- ◀ Tax equity



Biomass Energy

- ◀ Governmental Ownership
 - Tax-exempt or tax credit bond finance
- ◀ Private partnership (using production tax credit)
- ◀ Co-firing in existing boilers
 - Emissions co-benefits
 - RECs for electricity
 - RPS benefit to utility for renewable biomass on CHP
- ◀ Energy crops, advanced cellulosic ethanol
- ◀ Pellets, biochar
- ◀ Digester gas, landfills and water treatment



Building Efficiency

- ▶ Retrofits v. New Construction
- ▶ Includes infrastructure for transportation, start with fleets:
 - NGV's
 - Biofuels, biodiesel
 - EHV's
- ▶ Public Ownership
- ▶ Energy Service Company (ESCO's) as third party contracting and financing
- ▶ Private Ownership
 - Depreciation
 - Investment tax credits
 - New market tax credits
 - Commercial tax deductions for retrofits
 - Renewables incentives, credits
 - Private equity
 - Insurance



ESCO's

- ▶ MUSH markets
- ▶ 85% service to government entities, 15% private customers
- ▶ Structural flexibility
- ▶ Capital for performance against baseline for energy, water, resources
- ▶ Removal of fuel, electricity volatility
- ▶ Increasing market for future



Sustainable Energy Utility

- ▶ Can be used on a city, county or regional basis; or project specific basis
- ▶ VT, DE, DC, and NJ models
- ▶ In use for real estate redevelopment, with utility as anchor for region
 - NC, IN, MI



Sustainable Energy Utility

- ◀ Limited powers of city under state law
- ◀ Aggregation of properties
- ◀ RFP or prequalification of contracts (smart purchasing)
 - Offers flexible procurement standards better than city provides
- ◀ Contractual interface with city and private parties
 - Leases and subleases to developer
 - Serve as long-term power purchaser, power of off take commitment
 - City restrictions for long term contracting
 - Project finance; avoids City debt limits
 - Green procurement
- ◀ Centralized management with scale
- ◀ Longer amortization period for debt is critical



Future – New Sustainable Funding

- ◀ Sustainable funding mechanisms locally through:
 - Utility partnerships, RUS
 - Licensing, services, water or waste fees
 - Energy taxes, carbon taxes focused on consumption
 - System benefits funds
 - PACE 2.0 financing, revolving loan funds
 - Crowd sourcing, crowd funding
- ◀ L3C to access NGO, foundation funding in capital structure with patient returns
- ◀ Bond financing
- ◀ Vendor financing
- ◀ Community technical assistance, for residential, commercial and governmental users

Conclusion – Revitalize under a different scale proposition using local resources and capital. Counters the challenges of globalization and complexity to create a new community value proposition with energy strategy contributing to better quality of life.