



# *Using Renewable Energy to Promote Sustainable Agriculture & Education*

Presentation to  
Stonewall Farm's Board of Directors

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# Overview



- ❖ Introduction
- ❖ The Proposal
  - A Passive Solar Greenhouse
  - Sustainable Agriculture
  - Financial & Marketing Analysis
  - Educational & Promotional Opportunities
- ❖ Summary

# Introduction



- ❖ Our goal: *Present Stonewall Farm with an exciting and profitable revenue-producing opportunity based upon sustainable and renewable agricultural practices that foster the enhancement and expansion of its educational mission*
- ❖ **Stonewall Farm mission statement:** *Stonewall Farm is a nonprofit working farm and educational center whose mission is to connect people to the land and to the role of local agriculture in their lives*

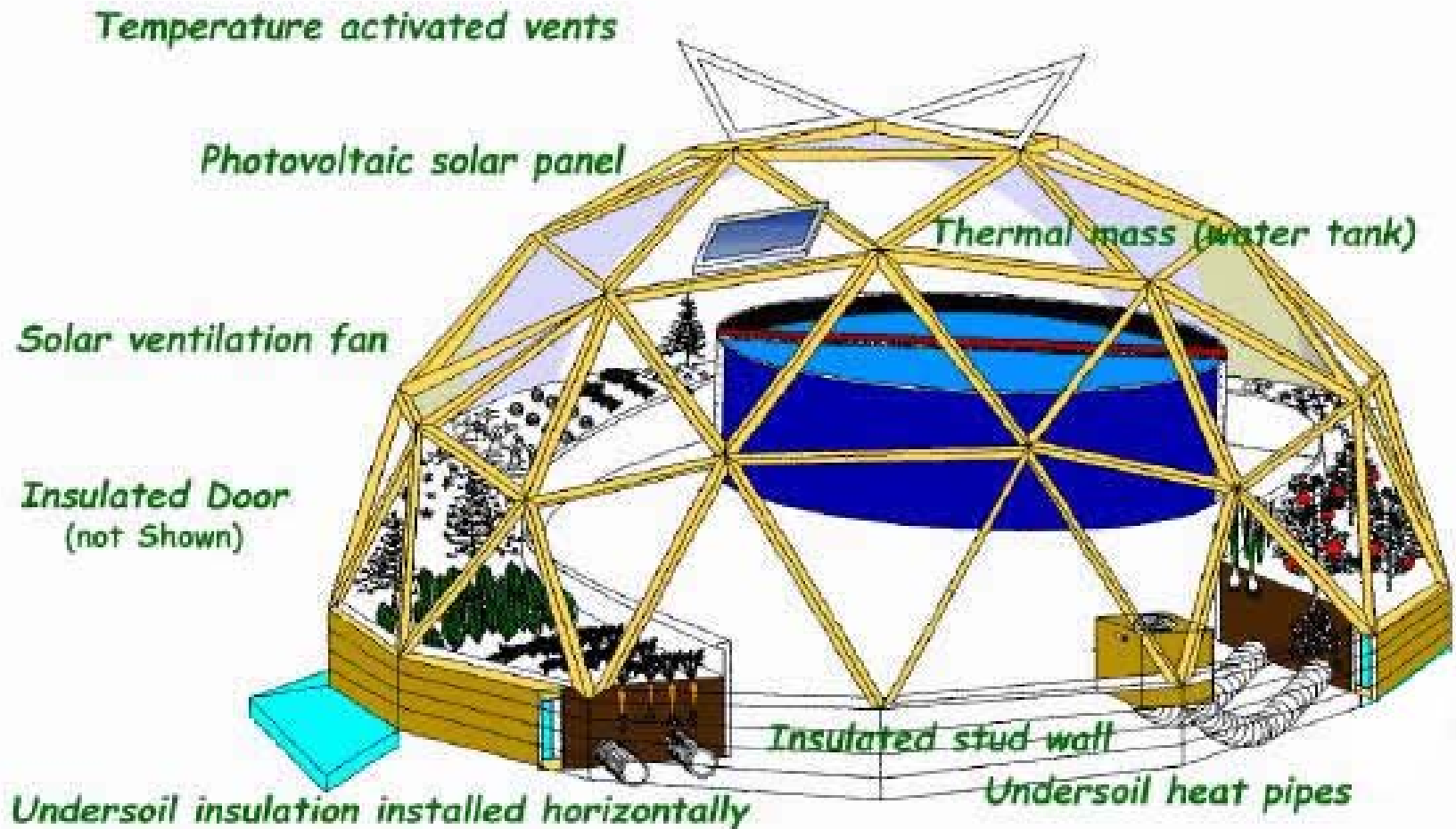
# Benefits of the Solar Passive Greenhouse

- ❖ Solar energy = no fossil fuels
- ❖ The concept of Permaculture
  - Circle of life
- ❖ Year round agricultural production
  - Production expansion via multi-tiered planting beds



# The Proposal: A Passive Solar Greenhouse

*A unique combination of seven features make the Growing Dome™ the most energy-efficient greenhouse on the market today!*



# Sustainable Agriculture in the Greenhouse

- ❖ Fully ripe, fresh-picked, organic and local produce is crisper, sweeter, loaded with flavor, and naturally rich in nutrition



- ❖ A summer season and a winter season offer almost year-round harvest in an environmentally sound and resource efficient set-up
- ❖ Value-added opportunities enhance the diversity and economic viability of greenhouse production



# Financial Analysis: Costs

## ❖ Start-up costs

- 51' diameter geodesic greenhouse = \$37,000
- Miscellaneous expenses = \$13,000
  - Shipping from Pagosa Springs, CO
  - Construction supplies and labor
  - Gardening supplies (e.g., planting beds, soil, water drums, etc)
  - Supplies to meet fire code standards
- **Estimated total start-up cost = \$50,000**

## ❖ Operating expenses


- Additional intern for winter season = \$5,000 (at \$200/week)
- Seeds, soils, miscellaneous = \$2,000
- **Estimated total operating expenses = \$7,000**

# Financial Analysis: Return on Investment

- ❖ Projected revenue for 51' diameter dome (interior = 2050 ft<sup>2</sup>)
  - Assumption: 1500 ft<sup>2</sup> production space\*
  - Estimated greenhouse crop yields: 2.5 lbs/ft<sup>2</sup> of produce/year<sup>†</sup>
  - Winter produce: lettuces, spinach, etc: \$7/lb x 1,500 lbs = \$10,500
  - Summer produce: tomatoes, peppers, etc: \$3.50/lb x 2,250 lbs = \$7,875
  - **Total projected revenue = \$18,375 / year**
- ❖ Start-up costs recouped within 5 years
  - Start-up costs amortized over 5 year period = \$10,000/year
  - Ongoing yearly expenses = \$7,000
  - Total expenses/year (first 5 years)= \$17,000
  - **Projected profit per year (first 5 years) = \$ 18,375 – \$17,000 = \$1,375**
- ❖ Projected profit after 5 years = \$11,375/year


\* Production space may be increased by adding elevated planting beds

† Conservative estimate from Growing Spaces, Inc.



# Financial Analysis: Potential Grants

- ❖ *USDA Sustainable Agriculture Research and Education (SARE) competitive grant program*
  - Northeast SARE offers grants to organizations including community nonprofits and educational institutions
    - Sustainable Community Grants
  - Stonewall likely to qualify
- ❖ *USDA Farm Bill Section 9006: Renewable Energy and Energy Efficiency Program*
  - Unclear if Stonewall qualifies
- ❖ More detail on these grants is found in the report appendix



# Marketing Analysis: Potential Customers

- ❖ *Farmer's Diner* – Quechee, VT
  - Buys local agricultural products from farmers <70 miles away (Stonewall <60 miles away)
  - Diner needs source of tomatoes during winter season
  - No local source for winter greens listed on website
- ❖ *Blueberry Fields* – Keene, NH
- ❖ *Hannaford's* – Keene, NH
- ❖ Nearby independent natural foods co-ops
  - Brattleboro and Springfield, VT
  - Hanover and Lebanon, NH
- ❖ Winter farmer's market in Lebanon, NH
  - New this year
- ❖ Local restaurants



# Educational & Promotional Opportunities

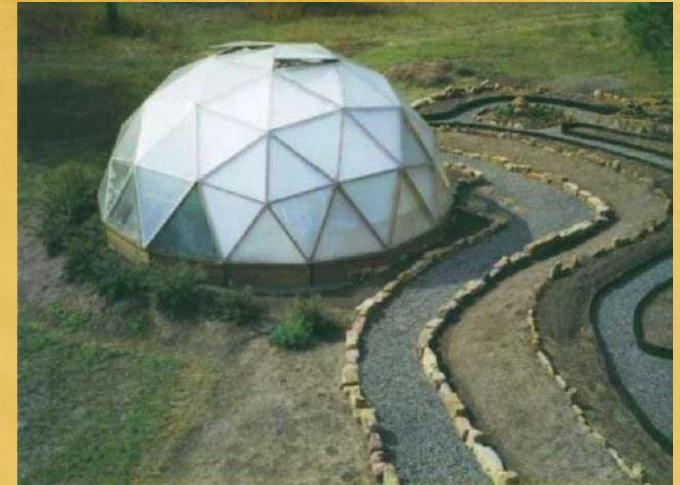
## ❖ Educational opportunities

- Permaculture / sustainability
- Organic agriculture
- Build your own greenhouse
- Grow your own plants
- Explain concept behind 'greenhouse effect' and global warming

## ❖ Promotional opportunities

- Greenhouse raising party
  - T-shirt design
  - Naming the greenhouse

# Summary



## ❖ Passive solar greenhouse: the value to Stonewall

- Meets Stonewall Farm's mission
- Generates profit
  - Enables Stonewall to enter lucrative winter greens market
  - Expands summer hothouse growing season
- Enhances educational programs

**Stonewall Farm mission statement: *Stonewall Farm is a nonprofit working farm and educational center whose mission is to connect people to the land and to the role of local agriculture in their lives***



# Thank You!

- ❖ For more information please refer to our accompanying report
  
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