Crystal Clear Technologies

Novel Technologies for Fast, Effective Treatment of Wastewater

Lisa M. Farmen
Founder & CEO
POWER UTILITIES USE 70% OF FRESH WATER

- Utilities
- Mining
- Agriculture
- Oil & Gas
- WW Mgmt

Industrial Processes
- Selenium
- Arsenic
- Mercury
- Lead
- Copper
- Uranium

Polluting Byproducts

>70% (U.S.)
LARGE & GROWING MARKET FOR SOLUTIONS

DRIVERS

• Expansion
• Finite supply (water)
• Rising population, urbanization
• Environmental regulations
• Global Competition

OPPORTUNITY

• Provide efficient and effective solution at lower cost
• Deploy a truly sustainable solution
• Convert a waste to a resource

Power sector
$3B+
CapEx

Local governments
$30B
annual O&M

Infinite demand
WATER IS USED TO MAKE EVERYTHING

9 bottles of water per bottle

1.5B gallons per processing plant (annually)

1.3M gallons per processing plant (annually)

1.1B gallons per processing plant (annually)
WASTEWATER DISPOSAL IS EXPENSIVE

Pollutants = EXPENSE
CCT REMOVES and HARVESTS CONTAMINANTS

 NMX™

Clean Water

6–16% Metal (by weight)

Protein Drink

Agriculture

Power Plants

Mining Runoff

Storm Water

+ Valuable Byproducts = REVENUE

Pollutants = EXPENSE
THE TECHNOLOGY

Chitin (waste material)
WHY CRYSTAL CLEAR TECHNOLOGIES?

Cheaper
CapEx ▼ 70%,
OpEx ▼ 20%

Faster
3-5 minute contact time,
vs. 2+ hours
(biological systems)

Sustainable
Reclaim solids,
Recycle water

Most Effective
<2 ppb selenium exceeds
drinking water standards

Scalable to 9,000+ gpm
(vs. competition max 500 gpm)

Removes contaminants to
< 2 ppb
(competition = 10+ ppb)
### EXAMPLES – AGRICULTURE

<table>
<thead>
<tr>
<th>Wastewater Volume* (gals/year)</th>
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<tbody>
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<td>Annual Cost to Sewer</td>
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*Per plant. DII has more than 200 processing plants.
## EXAMPLES – AGRICULTURE

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<td><strong>Wastewater Volume</strong>*(gals/year)*</td>
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<td><strong>OPEX Cost with CCT</strong></td>
<td>$234,000*(est. reduced annual sewer fee)<em>&lt;br&gt;$7,740</em>(OPEX NMX™)*</td>
<td>$27,500*(est. reduced annual sewer fee)<em>&lt;br&gt;$33,110</em>(OPEX NMX™)*</td>
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<td><strong>OPEX Cost with CCT</strong></td>
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<td>$27,500 <em>(est. reduced annual sewer fee)</em></td>
<td>$470,850 <em>(NMX™ OPEX)</em></td>
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<td>$29,069,925</td>
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WHAT’S NEEDED TO SCALE

MILESTONES ACHIEVED
✓ Intellectual property – 6 patents issued, with right to practice
✓ $2.25M funding to date, including >$1M in SBIR grants (NSF)
✓ External validation – Cleantech Open, Stanford, Bureau of Reclamation, ADM, Montana Bureau of Mining & Technology, ASU/Salt River Project, State of CA
✓ Global supply chain – manufacturing partners
   (equipment, nanomaterials)

NEXT STEPS
• First big customers – e.g., 10-year contract with State of CA
  (Imperial Irrigation District/Salton Sea, Kesterson Reservoir)
• Investment capital – seeking $1M over 18 months for raw materials;
  Sales & Marketing; staffing (Engineering, CFO, CTO); office/lab space
BUSINESS MODEL

- Full-scale engineered systems
- Annuity / service business
- Attractive margins
  - NMX™: 25%+
  - Equipment: 40%–50%
- Outsourced manufacturing
  (NMX™ and equipment)

SALES CHANNELS (Evaluating)

- B2B – direct to customer
- Licensing
- Direct to distributor
- Strategic partnerships

TARGET MARKETS

- Selenium
  - State of California/BOR Salton Sea
- Municipalities, Ag Runoff (numerous)
- Agricultural Food Processing
  - Wineries in California
  - Fruit and Vegetable Processing
  - Rendering/Meat Processing
- Mining Runoff
  - Berkeley Pit (26 billion gallons)
- Stormwater

39 STATES have stormwater utilities, and 7 states have 100+ of them
$1M (3-year ramp)

- Raw Materials
- Lab Space
- Personnel

Projects:

<table>
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<tr>
<th>Year</th>
<th>2017</th>
<th>2018</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
</tr>
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<tbody>
<tr>
<td>Value</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>11</td>
<td>15</td>
</tr>
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THE TEAM

Lisa Farmen, MBA  CEO  30+ engineering experience (Texas Instruments, Numonyx, ChemTrace, Sharp Labs, Sandia National Labs); built and sold OEM company; developed CCT IP; responsible for customer/partner acquisition

Mark Neuhausen, BS/MS/MBA COO  30+ Technologist, Executive and Angel Investor. Successful intrapreneur in large companies.

Joel Shertok, PhD  CTO  30+ Director, Advanced Plasma Solutions; SVP, Rochester Midland; international process industries consultant with expertise in formulation and global manufacturing

ADVISORS

Candace Chan, PhD, Materials Science Professor, Arizona State University; postdoctoral fellow in nanomaterials science at UC Berkeley

Sharad Hajela, PhD, former CSO; Sr. Director Materials R&D at Powervision; Cofounder, Clarity Polymers; NIH postdoctoral fellow in chemistry at UC Berkeley
Crystal Clear Technologies

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