

# RESOURCE RECOVERY AT TAJIGUAS

**More recyclables, compost and  
energy through new technologies**



# WHAT IS THE PROJECT

Began process in 2007 to reduce reliance on landfilling

Resulted in recommendation that:

- Supports region's recycling goals
- Helps region to meet new state mandates through environmental improvements
- Provides for cost-effective 20-year regional waste management option



# SUPPORTS REGION'S RECYCLING GOALS

Comprised of 3 facilities proposed  
at Tajiguas Landfill:

1. State of the art material recovery facility (sorts MSW for sale or further processing)
2. Anaerobic digester to process organics, extract greenhouse gases and convert to energy
3. Landfill remainder (less than 50%) thus doubling life of the landfill



# SUPPORTS REGION'S RECYCLING GOALS

Opportunity to process material from existing and future recycling programs

- Commingled recyclables currently sent to Ventura
- Food waste currently sent to Santa Maria
- Flexibility to shift material from the trash can to the recycling, greenwaste, or potentially foodwaste containers

# HELPS ALL JURISDICTIONS TO MEET UNFUNDED STATE MANDATES

- 20-year project  
(meets CalRecycle's 15-year disposal requirement)
- Potential to raise region's AB 939 diversion level to 80%+  
(meets AB 341 goal of 75% in 2020)
- Ability to eliminate greenhouse gas equivalent to 22,000 vehicles/year  
(AB 32 – greenhouse gas reductions by 2020)
- Ability to generate 1 megawatt of renewable energy  
(SB20 – 33% renewable energy by 2020)

# COST-EFFECTIVE

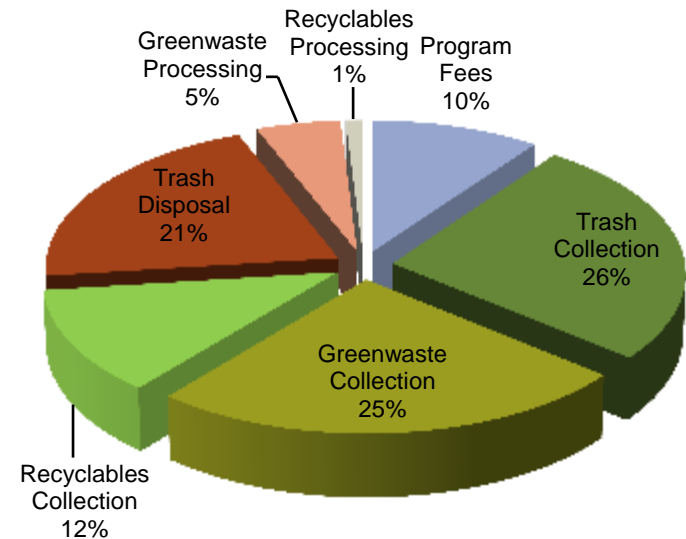
Current rates are comprised of:

- 1) Cost to collect
- 2) Cost to process/dispose
- 3) Fees

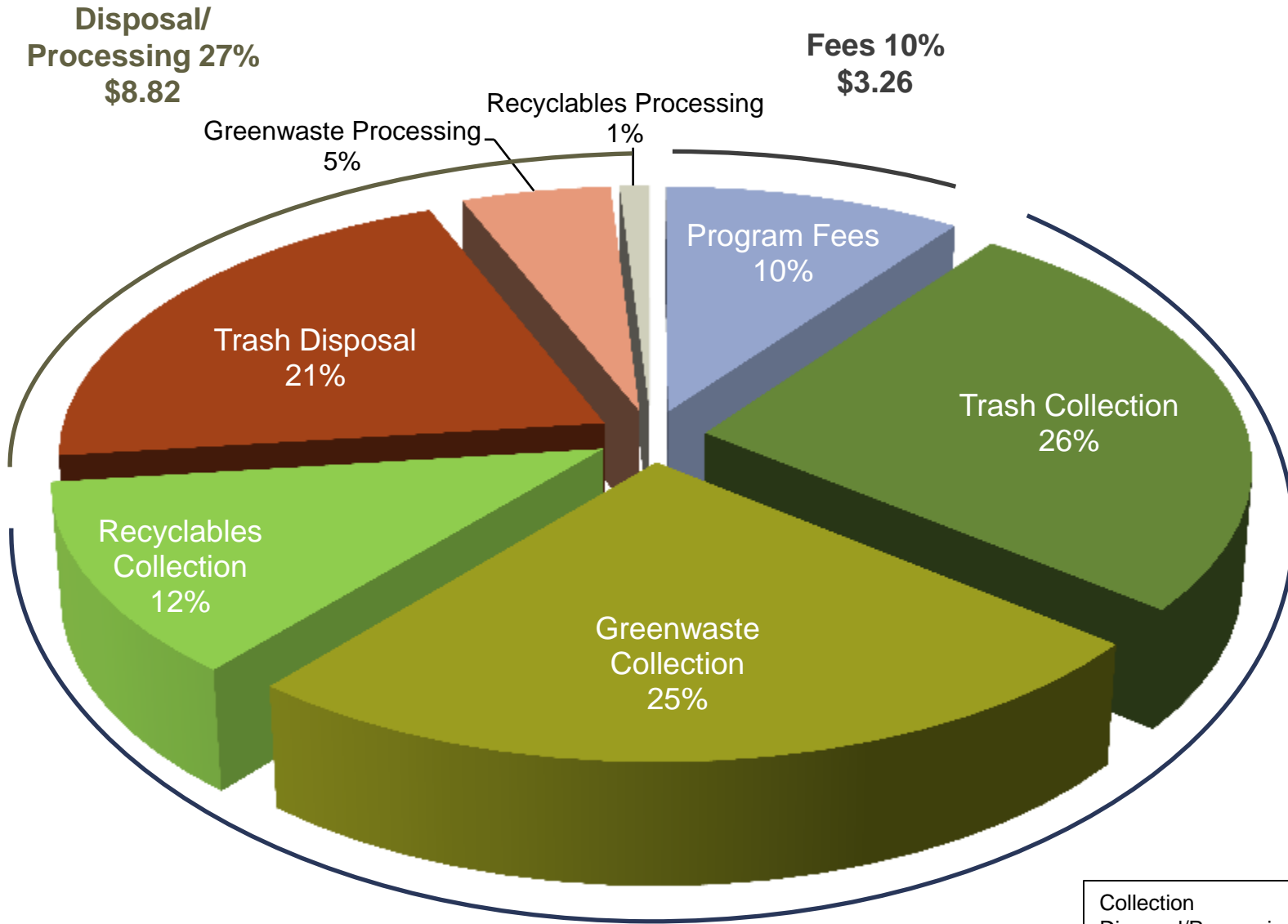
Disposal cost is between 21-33% of rate depending on jurisdiction

Proposed rate meets project criteria not to exceed \$100 per ton

## Breakdown of a Typical \$32.66 3-Can Trash Bill...



# Breakdown of a Typical \$32.66 3-Can Trash Bill...



**Collection 63%**  
**\$20.58**

Collection	\$20.58
Disposal/Processing	\$8.82
Fees	\$3.26
<b>TOTAL</b>	<b>\$32.66</b>

# RATE PROJECTIONS

Jurisdiction	Current Rate - 2012 <sup>1</sup>	Upper Limit with Resource Recovery Project - 2016 <sup>2</sup>	Cost Difference	Percent Change
Buellton	\$26.83	\$30.43	\$3.60	13.30%
County	\$32.83	\$36.56	\$3.73	11.30%
Goleta	\$25.85	\$28.84	\$2.99	11.50%
Santa Barbara	\$35.40	\$38.40	\$3.00	8.40%
Solvang	\$33.88	\$38.67	\$4.79	14.10%

<sup>1</sup> The rates chosen are the most commonly subscribed levels of trash for each jurisdiction: 90 gallons for Buellton, Solvang and the County; 64 gallons for Goleta and Santa Barbara. Current tipping fee of \$72.25 including costs associated with future Site Lease

<sup>2</sup> This assumes the upper limit in the RFP of \$100 per ton which would include the Site Lease cost



# CURRENT COST TO EXPORT WASTE

Potential Facilities						
Facility Name	County	Distance <sup>1</sup> (miles)	Permitted Capacity (tpd)	Transportation Cost <sup>2</sup> (\$0.16/ton/mile) <sup>3</sup>	Tip Fee	Total Cost (per ton)
Tajiguas	S.B.		1,500		\$72.25	\$72.25
Santa Maria	S.B.	68	740	\$21.76	\$69.90	\$91.66
Simi Valley <sup>4</sup>	Ventura	65	3,000	\$20.80	\$60.00	\$80.80
Cold Canyon	SLO	99	1,200	\$31.68	\$59.00	\$90.68
Chicago Grade	SLO	111	5,000	\$35.52	\$47.00	\$82.52
Chiquita	L.A.	73	6,000	\$23.36	\$57.00	\$80.36
Sunshine Canyon	L.A.	83	6,600	\$26.56	\$59.88	\$86.44
Olinda Alpha	Orange	123	8,000	\$39.36	\$54.30	\$93.66
Frank Bowerman	Orange	138	8,500	\$44.16	\$54.30	\$98.46
El Sobrante	Riverside	161	4,000	\$51.52	\$34.37	\$85.89

# HISTORY OF PROCUREMENT PROCESS

- In 2007 BOS and City of SB directed staff to actively look into feasibility of alternatives to landfilling to serve the South Coast
- Formed working group including staff from each jurisdiction served (CT Subgroup to MJSWTG)
- Hired consultant and developed RFP for project including significant input from staff from each jurisdiction

# **HISTORY OF PROCUREMENT PROCESS**

- Goals approved by BOS and SB City Council in January 2008
- BOS and all Cities approve Letter of Support in conjunction with release of RFP

# ORIGINAL RFP GOALS

- ✓ Increase diversion of post-recycled MSW
  - ✓ Reduce environmental impacts of landfilling MSW
  - ✓ Provide financial feasibility and sustainability
  - ✓ Production of green energy and other marketable products
  - ✓ Provide a humane work environment
  - ✓ Result in a long-term waste management plan (20 years)
- 
- Emphasis on not affecting existing or planned recycling programs but management of MSW being landfilled

# HISTORY OF PROCUREMENT PROCESS

- 2009: RFP released to 11 companies
- 2010: 4 companies responded (with 5 proposals)
- Early 2011: Public Forum approved recommendation that 2 companies did not meet local needs
- Summer 2011: selected preferred company with 2 proposals



# PROJECT OUTREACH

## Comprehensive and transparent outreach efforts since project initiation:

- Over 90 presentations in the last four years to area stakeholders
  - City Councils and Board of Supervisors
  - Public Official Forums
  - Multi-Jurisdictional Solid Waste Task Group
  - Environmental & Advocacy organizations
  - Business Groups
  - Regulatory Agencies



# COMMUNITY CHOICE



- Dedicated Website  
[www.ConversionTechnologyStudy.com](http://www.ConversionTechnologyStudy.com)
- Overwhelming interest in doing more with our waste
  - Increasing recycling
  - Generating energy
  - Decreasing environmental impacts
- Concern with air emissions associated with thermal technologies and lack of comparable data

# **GASIFICATION – what we've learned**

- Emerging technology
- Increased energy creation
- Significant reduction in need for landfills
- Need for more comparable air emission data
- Need for more clear permitting path
- Lack of community support
- Will continue to monitor feasibility in the future





# COMMUNITY CHOICE

- **Recommended project**
  - State of the art material recovery facility
  - Enclosed dry fermentation anaerobic digester
  - Landfill residual
- **Current recommendation has strong broad-based support**



# **RECOMMENDED PROJECT MUSTANG RENEWABLE POWER**

**Proposer/project developer: Dewey Group & Rossi  
Enterprises based in San Luis Obispo**

## **Participating Firms:**

1. Van Dyk Baler Corp: design, engineer, manufacture, install and service material recovery facility equipment
2. Bekon Energy Technologies: provide, install and maintain anaerobic digester equipment

# RECOMMENDED PROJECT MUSTANG RENEWABLE POWER

## Participating Firms:

3. AJ Diani Building Corporation: construction of project - based in Santa Maria
4. Worley Parsons: project engineer
5. Westhoff, Cohen & Holmstedt: investment banker
6. Facility operator yet to be selected

# RECOMMENDED PROJECT MATERIAL RECOVERY FACILITY

- Material Recovery Facility to sort material in trash can
  - Recyclables (25%)
  - Organics (29%)
  - Trash (46%)
- At least 50% of what is buried is no longer landfilled
- Recyclables removed, baled and sold as commodities
- Opportunity to process source separated recyclables (blue can)



# RECOMMENDED PROJECT

# MATERIAL RECOVERY FACILITY

## Van Dyk Baler Corp (US Systems integrator since 1984)

- Featuring a Bollegraaf / Titech system similar to widely used systems all over the world
- Between 2007-2009 developed 5 facilities with average flow of 195,000 TPY
- First US dirty MRF facility opened in New Jersey in 1994
- Similar equipment design to facilities built in Toronto, CAN (2007), San Antonio, TX (2011)
- 12 similar projects in the US in either the permitting or development phase
- Recovery rates for this type of facility range from 50% to 70%
- Based on the most recent waste characterization study we can expect to recover 50% to 60%

# RECOMMENDED PROJECT

## ANAEROBIC DIGESTER (DRY FERMENTATION)

- Enclosed anaerobic digester to digest organics
- Approximately 29% of waste currently buried is organic
- Biogas (methane) is extracted from the organics and converted to energy
- Digested material can be cured to create a compost product
- Opportunity to process source separated food waste & other organics



# RECOMMENDED PROJECT ANAEROBIC DIGESTER

## **Bekon Energy Technologies:**

- Widely used in Europe (20 years of technical development)
- 16 commercial scale facilities in operation
- 10 others in planning or under construction
- Size of facilities range from 8,300-44,000 TPY
- Composting of MSW currently occurs in the US but not using AD facilities
- Dry fermentation anaerobic digestion technology also included in San Jose AD facility currently under construction

# RECOMMENDED PROJECT CONSTRUCTION CONTRACTOR

## AJ Diani

- Long term North County contractor
- \$100M bonding capability





# RECOMMENDED PROJECT TAJIGUAS LANDFILL

- Remaining waste to be landfilled (less than 50%)
- Will double the life of the Tajiguas landfill permitted disposal capacity



# FINANCIAL PLAN FOR PUBLIC/PRIVATE PARTNERSHIP

- Privately financed, built and operated
- 60% of funding from California Pollution Control Financing Authority bonds
- Vendor paid through tipping fees at facility
- Operational portion of tipping fee to be adjusted annually by CPI
- Revenue from sale of energy and recyclables to offset tipping fee
  - Provision for sharing revenue over thresholds (windfalls)

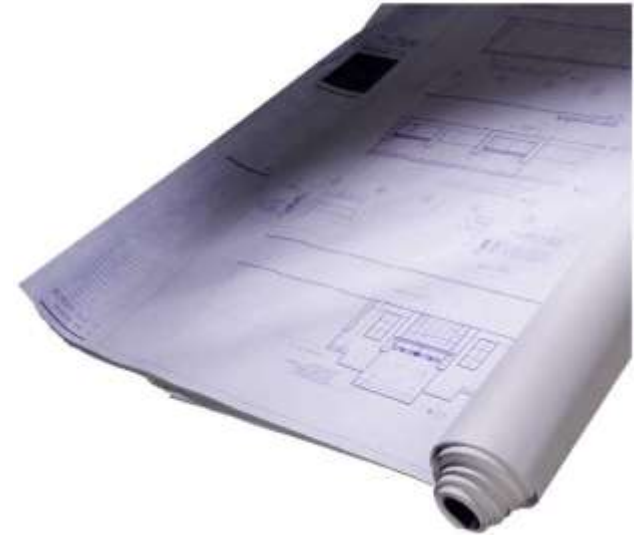
# KEY PROJECT POINTS

## 20-year agreement

- Industry standard (collection contracts)

## Performance requirements based on waste characterization (per Section 4.15 of RFP)

- Well defined performance standards
  - Termination provision based on performance specification
  - Diversion levels
  - Energy output level guarantee
  - Environmental compliance



# KEY PROJECT POINTS

## Commitment of material to facility

- Types of impacts on tonnage
  - Economic
  - Recycling
  - Regulatory
- Limitation of impacts
  - Tonnage sharing among jurisdictions
  - Periodic review and reset of material commitment or design for wider range (will affect cost)
  - Facilities to process source-separated commingled recyclables and organics which will mitigate shifts from the trash can to the recycling containers
  - Several options in rate setting (set rate at minimum delivery commitment, and overages banked for shortages)

# CEQA REVIEW

- County to act as Lead Agency for CEQA Review
- The project is to further process material currently disposed of at Tajiguas Landfill by using 3 proposed facilities:
  1. Materials Recovery Facility (sorts material for sale or further processing)
  2. Anaerobic Digester to process organics, extract greenhouse gases and convert to energy, and
  3. Landfill the remainder
  4. Additionally, processing of:
    - Source-separated recyclables, and
    - Source-separated food waste
- Will include analysis of alternatives
- Recommend RFP to identify consultant to prepare environmental document

# **RELATIONSHIP B/W VENDOR & JURISDICTIONS DURING PROJECT DEVELOPMENT**

## **Vendor Commitments:**

- Agreed to pay for CEQA review
- Will provide technical information necessary to complete review

# **RELATIONSHIP B/W VENDOR & JURISDICTIONS DURING PROJECT DEVELOPMENT**

## **Jurisdiction Assurances:**

- Develop MOU or term sheet between County (lead agency) and Mustang regarding good faith negotiations
- Intention to participate in the project from all jurisdictions
- Formalize interagency management structure

# RELATIONSHIP BETWEEN JURISDICTIONS

- **Create interagency agreement (Joint Powers Authority, etc.).**
  - Emphasis on reducing risk and ensuring commitment to the project
  - Ensuring fair representation
  - Forum to evaluate contract provision modifications and regulatory changes
  - County to provide administrative and monitoring support



# REGIONAL BENEFITS

- **20-year management plan**
- **Cost-effective compared to alternatives**
- **Supports regional recycling programs**
- **Helps to meet state mandates**
  - Over 80% AB 939 diversion rate
  - Elimination of greenhouse gas equivalent to 22,000 vehicles per year
  - Generation of 1+ megawatts of renewable energy per year

# NEXT STEPS

**Jan 2012:** BOS approval to:

- Select Mustang MRF & AD proposal as preferred alternative
- Identify County as Lead Agency and initiate CEQA analysis
- Develop MOU or term sheet between County and Mustang
- Seek intention to participate in the project from all jurisdictions
- Formalize interagency management structure

**Jan – Mar 2012:** negotiations with Mustang for term sheet before beginning CEQA review

**Jan – Mar 2012:** update and intent to participate from City Councils

# NEXT STEPS

**Apr/May 2012:** BOS approval to:

- Approve project description and award of CEQA contract
- Approve agreement with vendor to fund CEQA analysis
- Approval of MOU or term sheet re: good faith negotiations

**2012:** Development of interagency agreement

**2012/2013:** Development/review and approval of CEQA document

**2013/2014:** Contract negotiations with Mustang

# THANK YOU QUESTIONS?



[www.CONVERSIONTECHNOLOGYSTUDY.com](http://www.CONVERSIONTECHNOLOGYSTUDY.com)