



**Case Study:
Win-Win for Community, Environment and
Economic Success**

**Michelle Eldridge, DTE Energy
Jay Wilber, Goodwill's Green Works**



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**Our mutual goal is to recover everything and minimize what is going
to landfills.**

WHY WE ARE SHARING OUR STORY

Triple Bottom Line





ABOUT DTE ENERGY

- **DTE Energy Co. (NYSE: DTE)** is a diversified energy company involved in the development and management of energy-related businesses and services nationwide.
- DTE's largest operating subsidiaries are **DTE Electric and DTE Gas.**
- DTE provides electric and/or gas services to more than **three million** Michigan residential, business and industrial customers.
- DTE's electric and gas utility businesses have each been in **operation for over a century.**
- DTE has leveraged that wealth of experience and assets to develop a number of **non-utility subsidiaries which provide energy-related services to business and industry nationwide.**

ABOUT DTE ENERGY



- DTE is a founding member of the **Electrical Utility Industry Supply Chain Sustainability Alliance (EUISSCA)**
- DTE has **33 Clean Corporate Citizen** designations
- DTE has **30 Wildlife Habitat Council Certified** sites



DTE'S PURPOSE

We serve with our energy, the lifeblood of communities and the engine of progress

INVESTMENT RECOVERY MISSION STATEMENT

Investment Recovery's commitment is to process DTE Energy's surplus, **obsolete and recyclable material in a safe, environmentally and economically sound manner**



DTE RE-USE AND RECYCLING

Investment Recovery

- DTE's Investment Recovery (IR) **collects, recycles, sells or donates many of the company's retired assets**
- DTE's IR processes **millions of pounds of scrap metal** each year
- From computers to transformers, IR **finds new life for old materials**
- **Reduces the amount** of reusable resources and contaminants that would otherwise be **headed for landfills**
- In-house and onsite **third party paper and cardboard recycling**



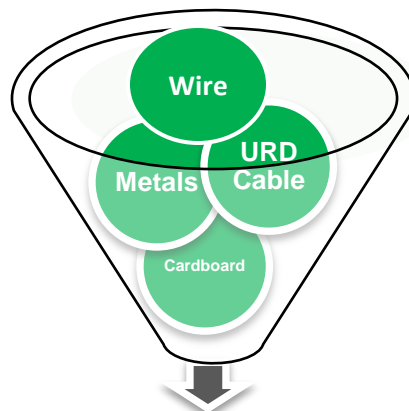
DTE's "ONE STOP BIN" PROCESS

Acceptable material:

- All Wire including on Wood Reels
- Metal
- Cardboard
- Plastics
- All other recyclables
- URD Cable

Non Acceptable material:

- Oil filled equipment
- Liquids
- Hazardous material
- Tanks / Tires / Batteries
- Computers / Electronics
- Garbage / Animal waste
- Pole Butts / Cross arms
- Empty Wood Reels



Transported by DTE Material Transport from DTE site to WSC or processing center for separation (Hand Sorted) by commodity.



Bins at Contractor Yards



Containers at Service Centers



Roll-off content prior to separation.



Baled Cardboard

Baled Wire



Steel



Baled Plastic



ACCEPTABLE ASSETS AND MATERIAL TO RETURN TO IR

Computers / Electronics



Empty Wood Reels



Empty Tubs



Trailer Returns



- Oil Filled Equipment
- Stock returns
- Machinery / Tools
- Cross Arms
- Empty Wood Reels
- Reusable plastic tubs
- Computer / Electronic Equipment

Cross Arms



Oil Filled Equipment

Pad mounts



Pole mounts



Bushings



Tools and Equipment



DTE RE-USE AND RECYCLING



DTE ENERGY AND GOODWILL'S GREEN WORKS

- **Since 1942, DTE Energy and Goodwill Industries of Greater Detroit have worked together** to provide the services traditionally offered through DTE Energy's Investment Recovery/Salvage operation.
- This includes the **reclamation of surplus goods and equipment, and the liquidation of surplus, obsolete and scrap materials and equipment.**
- In **January 2010, the DTE/GIGD affiliation produced a new partnership** that has proven beneficial to both groups.
- Through this partnership, **Goodwill's Green Work's was created**
- The partnership also **allows DTE Energy to focus more on its core business** while still maintaining oversight of asset disposition.



DTE ENERGY RECYCLING 2014-2015

(UNITS IN TONS UNLESS OTHERWISE NOTED)

Paper	345
Cardboard	346
Plastic	8
Bulbs	16
Batteries	101
Computers / Electronics	65
Appliances (Customer Appliances)	2,806
Ferrous Metal	7,513
Non-Ferrous Metal	3,223
Wood	407
Used Oil-Energy Recovery (Gallons)	346,506
Used Oil-Recycled (Gallons)	72,774



SOLAR POWERED TRASH COLLECTORS SERVING OUR LOCAL COMMUNITY

- DTE Energy is experimenting with **smart, solar-powered trash compactor and recycling units** near its Detroit headquarters complex.
- The “**Bigbelly**” units are the first solar-generated compactors in Detroit.
- The compactors **eliminate trash overflow**, which helps beautify the neighborhood and keeps pests away.
- The **solar panel on the unit** extracts energy from the sun to continuously charge the battery powering the system.
- When the unit needs to be emptied, the **smart system sends a signal via its CLEAN management software**.
- The system **dramatically reduces trash collections and vehicle carbon emissions**.





DTE RE-USE AND RECYCLING

DTE also focuses on **reuse and recycling from an industrial perspective**. Examples of its efforts to embrace this commitment include:

- Finding a **new use for the old bricks from the lining of the stack** at its River Rouge Power Plant.
- The power plant replaced the lining of its stack and instead of disposing of **1.5 million pounds of bricks**; it used them to create a new **base for the plant's coal pile**.
- This project prevented the brick from being land-filled and offset the material resources that would otherwise have been used to create the base.
- Finding a new use for more than **220,000 lbs. of rubber belting** from its Monroe and Belle River Plants.
- Excess **belting was reused rather than wasted in a landfill**.
- Recycling more than **2.7 million pounds of old metal gas pipe**.
- DTE's Natural Gas Transmission group installed new piping to improve reliability and faced the decision of **what to do with the old piping**.
- DTE **decided to remove the piping rather than leave it in place**, resulting in the reuse of the material.

GREEN WORKS OVERVIEW

ABOUT GOODWILL'S GREEN WORKS

Mission

- Training Metro Detroit residents with **employment challenges** and growing recycling activities to create more job opportunities.

Purpose

- Providing **real life experiences** for Metro Detroit residents in a professional environment.

Results

- **Creating jobs** and generating revenue for the fight against regional unemployment and poverty, while achieving “green” results.

ABOUT GOODWILL'S GREEN WORKS (GGW)

- In **January, 2010**, Goodwill Industries of Greater Detroit **created Goodwill's Green Works.**
- GGW offers **cost-saving, labor-intensive asset recovery and industrial recycling services** to DTE Energy and has recently expanded its services to other companies.
- GGW is a **non-profit subsidiary of Goodwill Industries of Greater Detroit** and produces revenue to fund vital job training, education and placement programs for those facing employment challenges in Metro Detroit.
- GGW/GIGD has been **recycling/repurposing DTE materials for more than 70 years**
- GGW has a **94,000 square foot facility** located at 6421 Lynch Road, Detroit, Mi.
- GGW employs ~seventy **(70) permanent employees**
- GGW maintains ~thirty **(30) trainee positions** primarily for MDOC Transitional Work Experience positions.

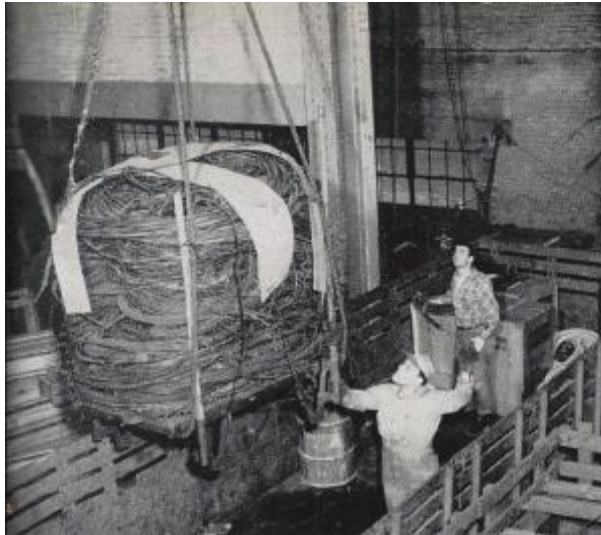
GREEN WORKS IN PARTNERSHIP WITH DTE

Green Works Capabilities

- **Asset Recovery** from waste materials
- Recycling **management services**
 - Knowledge and network in the **commodity markets**
 - Scrap Material **Audit** capabilities
 - Cradle to grave **documentation**
- Clean room processing **environmentally sensitive materials**
- An “**e-commerce**” **web site: materialplus.com** to resell and/or repurpose usable materials and products
- **Low-cost solutions** for labor intensive activities

HISTORICAL PHOTOS OF SALVAGING AT DETROIT EDISON

DTE and Goodwill: Recycling Partners for Over 70 years



GOODWILL'S GREEN WORKS OVER 70 YEARS LATER

Green Works' Facility: 94,000 sq. ft.



GOODWILL'S GREEN WORKS

DTE Trailers Transporting Material for “Asset Recovery”



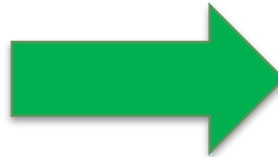
GOODWILL'S GREEN WORKS

DTE Containers of Material for "Asset Recovery"



GOODWILL'S GREEN WORKS

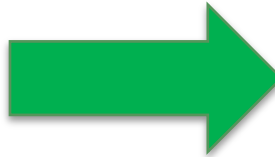
DTE “One Stop” Roll-off Containers brought in for “Asset Recovery”



GOODWILL'S GREEN WORKS

"ONE STOP" SORTING PROCESS

Rough Sort



Divided Into Parts/products Categories



GOODWILL'S GREEN WORKS

Packaged and Prepared for Returned to DTE Stock



GOODWILL'S GREEN WORKS

Transformer Deconstruction Process



GOODWILL'S GREEN WORKS

Transformer Recycling: Core Deconstruction



GOODWILL'S GREEN WORKS

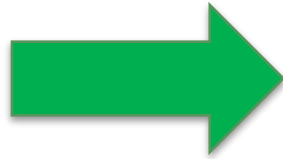
Transformer Core Recycling and Shredding



GOODWILL'S GREEN WORKS

Transformer Core Shredding

From this



To this



GOODWILL'S GREEN WORKS

Wire Chopper Process



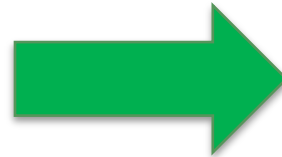
GOODWILL'S GREEN WORKS

“Wire Chopper Process” Separates Aluminum from Insulation

From this



To this



GOODWILL'S GREEN WORKS

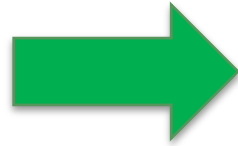
Manufacturing DTE Tension Wire



GOODWILL'S GREEN WORKS

Tension Wire Orders

From this



To this



GOODWILL'S GREEN WORKS

Underground Cable Processing Room



GOODWILL'S GREEN WORKS

UNDERGROUND CABLE PROCESSING ROOM



GOODWILL'S GREEN WORKS

UNDERGROUND UTILITY CABLE SPLITTING



GOODWILL'S GREEN WORKS

From this



Copper



To this



Lead

GOODWILL'S GREEN WORKS OIL FILTER RECYCLING CENTER



GGW OIL FILTER PROCESSING CENTER



TYPICAL STEEL BRIQUETTE



TRUCK DUMP HOPPER AND DRAIN PROCESS



MATERIAL RECOVERED AND RECYCLED FROM OIL FILTER RECYCLING FEBRUARY 2014 – DECEMBER 31, 2015

Steel from Oil Filters	8,708,242 Lbs.
Recovered Used Oil	280,650 Gal.
Scrap Steel	333,426 Lbs.

NEW PROCESS AND OPPORTUNITY



GOODWILL'S GREEN WORKS WELDING TRAINING CENTER



GOODWILL'S GREEN WORKS WELDING TRAINING CENTER



MAGNIFICENT SEVEN



All the above students had welding jobs before they finished their Welding Training Class

Goodwill's Green Works

2015 Overview

- Green Works assisted the MDOC with training and job placement for over **(100)** Detroit residents either on probation or paroled.
- Green Works recycled over **(18)** Million pounds of material
- Green Works recycled over **(5,400) transformers** containing **(88,000) gallons** of oil for DTE Energy
- Green Works recycled over **(28) miles of underground leaded copper cable**
- Green Works recycled over **(980,000 lbs.)** of **copper**
- Green Works recycled over **(610,000 lbs.)** of **lead**
- Green Works recycled over **(1,072,000 lbs.)** of **aluminum**

Michigan Governor Tour Goodwill Industries of Greater Detroit



Michigan Governor
Rick Snyder and Keith Bennett
“Flip the Script” Training Program Director
May 18, 2015
Goodwill Industries of Greater Detroit

GOODWILL'S GREEN WORKS RECOGNITION AWARDS

- In 2010, Green Works was selected by Corp! Magazine as a **“Michigan Economic Bright Spot Award”** winner.
- In 2011, Green Works was selected as a **“Michigan Green Leader”** by the Detroit Free Press
- On April 22, 2015, the Environmental Management Association (EMA) of Michigan named Green Works its **“2014 Environmental Achievement Award”** winner for its Used Oil Filter Recycling Operation.

GOODWILL'S GREEN WORKS

From This



Gangs



Incarceration



Homeless

GOODWILL'S GREEN WORKS

To This!



**At Goodwill's Green Works,
We are "Lighting a New Path"**

DTE-GGW PARTNERSHIP

Triple Bottom Line



WIN-WIN FOR THE COMMUNITY

- In **2015, Goodwill Industries of Greater Detroit**, provided services to over **11,000 Metro Detroit Residents**.
- Over **1,500 found employment** with 90% still on the job after (90) days
- The DTE Partnership resulted in GGW being able to assist over **(150)** GIGD returning citizens with Transitional Work Experience assignments.
- **90% were provided job placement** services with the remaining 10% offered permanent positions with GGW.
- The State of Michigan Department of Corrections benefits because GGW/GIGD rate of recidivism is ~10%, less than the states average rate of **29%**
- Employed **returning citizens contribute to the economic activity** within the community.
- Many **people served by GGW/GIGD become paying customers for DTE's energy, services and products.**
- GGW is currently working with the State of Michigan and Detroit/Wayne County on a pilot program to **provide Transitional Work Experience assignment's to young males ages 16-25 placed on probation** rather than being imprisoned avoiding felony's on their records---an impairment to employment.

WIN-WIN FOR THE ENVIRONMENT

- DTE Energy partnership with GGW resulted in over **(17) million pounds of material diverted from landfills.**
- All of DTE's materials being processed through GGW are **documented, sorted, classified and where appropriate "up-valued"** to maximize value to DTE.
- Less than **20% of all material sent to GGW for processing is sent to landfill.**
- GGW assists DTE with its **environmental compliance** requirements.
- All unknown and potentially hazardous materials i.e. spray cans, unmarked containers, unmarked material etc. **are documented, quarantined when necessary and returned to DTE for appropriate processing.**
- **GGW** is a great example of what can be done when a **publically held for-profit Company partners with a non-profit organization to protect the environment.**

WIN-WIN FOR THE ECONOMIC SUCCESS

- **DTE Energy**, through its Investment Recovery activities, sends its recovered/retired assets **to GGW for identification, sorting, processing, up-valuing and selling.**
- The proceeds from the **sale of the DTE recovered/retired assets are divided monthly between the partners.**
- **DTE uses its proceeds to pay for its Investment Recovery operational cost.**
- **GGW** uses its proceeds to pay for **wages, equipment maintenance, and overhead** to accomplish **its mission** of assisting Detroit Metro residents with employment challenges to prepare for and find jobs.
- The economic activity generated for GGW **sustains over (100) employees/trainees and their families.**
- GGW continued **viability is inextricably linked to DTEs commitment to the (73) year partnership with Goodwill Industries of Greater Detroit and its subsidiary, Goodwill's Green Works.**

WHAT HAVE WE LEARNED FROM PARTNERING?

- A **sustainable process model** that provides mutually beneficial outcomes for people, organizations and the environment both now and for the future **is essential**
- Applying **continuous improvement** to an existing process can help **eliminate waste in the process**
- Demonstrating **good corporate citizenship/stewardship is great for the environment and community**
- **Utilizing non-traditional resources can be effective**

Questions?

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