

# CASE STUDY:

## THOMPSON MARINE DELIVERS POWERFUL NEW TOWBOAT WITH TIER 4 EMISSIONS TO NATION'S LARGEST PUBLIC POWER SUPPLIER

### CUSTOMER

Tennessee Valley Authority (TVA)

### LOCATION

Alabama

### CAT DEALER

Thompson Marine

### PRODUCT

Cat® 3512E

### INDUSTRY

Inland Waterway

### SOLUTION

Cat 3512E Tier 4 IMO III Engines

## CAT® 3512E TIER 4 ENGINES PROVIDE RELIABLE TRANSPORTATION TO SUPPORT NUCLEAR POWER PLANTS

The Tennessee Valley Authority (TVA) is the nation's largest public power supplier, delivering energy to 10 million people across seven southeastern states. TVA's diverse generation portfolio includes nuclear, hydro, solar and gas. TVA also provides flood control, navigation and land management for the Tennessee River system, and assists local power companies and state and local governments with economic development and job creation.

To help achieve its multi-faceted mission, TVA requires the availability of dependable inland waterway vessels that can safely transport crews and move cargo. In alignment with its carbon reduction goals and commitment to responsible environmental stewardship, TVA sought a new towboat equipped with powerful engines designed to meet today's emissions requirements.

### A NEW TOWBOAT FOR A NEW ERA

TVA worked with Cat® Dealer, Thompson Marine, to review options for adding to its current towboat fleet. With a team offering over 250 years of experience combined, Thompson Marine understood the challenges and technical requirements involved in moving oversized, critical components up and down a constantly changing river. TVA's new towboat would be required to house a small crew and maneuver a specialized barge carrying equipment too large to move over a highway, such as turbines and generators.

The new vessel would require a robust engine; however, TVA also wanted the boat to align with its sustainability objectives. With this in mind, Thompson Marine recommended a pair of Cat 3512E Tier 4 engines which would provide 2,682 horsepower while delivering improved fuel economy and greatly reduced emissions.



Caterpillar has had Tier 4 marine engines running in the field since 2017, and the new Cat 3512E Tier 4 engines met TVA's requirements for expanding its fleet.

The new boat was designed around the selected engines. Having installed 20 Tier 4 engines in a variety of vessels, Thompson Marine was qualified to configure the Cat 3512Es for the new towboat.

The EPA Tier 4/IMO III emissions-compliant engine utilizes diesel exhaust fluid (DEF) to comply with EPA emissions regulations.



## RELIABLE POWER WITH LOWER EMISSIONS

The new Cat 3512E-powered 100-foot towboat, named m/v Freedom, is currently operated by TVA. According to TVA and Thompson Marine, the vessel has demonstrated fuel savings of up to five percent using less than three percent DEF.

"The m/v Freedom can tap into the power it needs while allowing us to meet our sustainability aspirations", said Shane Carman, manager of river services and coal combustion products, facility management for TVA.

Gary Sarrat Jr., Caterpillar Marine inland & tug segment key account manager added, "More maritime operators are adopting Tier 4 marine engines. Our field-proven Tier 4 capabilities and global dealer network offer organizations the power solutions and support they need to help them achieve their goals."