Website Redesign Proposal

For

The Florida Energy Systems Consortium (FESC)

Contents

Objective

To redesign the FESC website, focusing on modernizing the aesthetic design and improving the information architecture.

Background

The Florida Energy Systems Consortium is comprised of universities and companies within the energy industry. They've come together to meet a wide set of goals including:

- Initiate collaborative research on various methods of energy production
- Share the results of the research amongst each other, the rest of the science community, media, and government in order to help advance the industry.
- Assist in the creation and development of a Florida-based energy technology industry.
- Provide a state resource for objective energy systems analysis.
- Develop education and outreach programs

Analysis of the Current Site

Looks and Layout

The current state of the site is outdated in its design.

- Color scheme can be improved upon to better convey an energy friendly feel to the visitor
- Information architecture of the site is clunky and disorganized.
- A structural audit run from https://wave.webaim.org returned the following instances of code that would need to be fixed on various pages:
    - Missing form label
    - Empty heading
    - Redundant link
- Search bar and header takes up too much real estate above the fold
- "Download Brochure" located in an awkward part of the page
- Social Media buttons are much too large

Accessibility

The site has not been coded to take into account the use of screen readers and other tools available to help the handicapped navigate their way through the site. An accessibility audit run through https://wave.webaim.org yielded the following errors:

- Very Low Contrast in Nav Bar text
- Missing alternative text in images

Responsiveness

The site in general is not responsive to today's needs.

- On a desktop browser, the site looks fine at full screen. But re-sizing the browser window to any smaller size brings up a horizontal scroll bar.
- On a mobile browser, we see the header and footer of every page only go across the screen up to 2/3 of the page while the text is displayed across the entire width
- On a tablet browser, the site is displayed in the same manner as the mobile browser

Performance

In order to gauge the performance of this site, tests were run through multiple performance evaluation sites and got back the following data:

Evaluation Site	Grade	Load Time	Page Size	Requests	Tested From
tools.pingdom.com	C (70%)	2.99s	1.25MB	61	San Jose
gtmetrix.com	D (66%)	2.50s	1.26MB	61	Vancouver

Additional performance measurements were run using the following online tools:
https://developers.google.com/speed/pagespeed/insights/
https://www.webpagetest.org/

These tools identified the following as problem areas for page performance:

- Leverage browser caching - certain cacheable resources had a too short of a freshness lifetime
- Optimize images
- Too many Javascript and CSS files
    - There are 7 JavaScript files
    - There are 7 CSS files
    - They should be combined into as few files as possible
- Render blocking of JS and CSS in above the fold content

Necessary Devices to Support

A website should be made to work optimally across a variety of devices and browser sizes. We will want to create a site that will be viewed properly across the following devices:

- Mobile
- Tablet
- Desktop Computer
- TV Monitor

Redesign Overview

Color

Change the color scheme of the site to allow the visitor to feel the theme of the message. Since the message is primarily on clean energy, green or blue might be a good color to start building on

Information Architecture

Create a simpler and more organized layout with less menu options. We can go with a one navbar design. In addition, we can remove the sub-menus that come up when selecting a menu item and look for alternate ways of presenting the data.

Accessibility

Create a site that is friendly towards visitors with disabilities. A high contrast color scheme between background and text will be implemented. 'Alt' text will be added to all image 'img' tags.

Responsiveness

Optimize the site to allow for proper viewing across multiple devices. Keep the intention of future proofing the site for the devices and screen sizes of the future.

Compact the JavaScript and CSS Files

Compacting JavaScript and CSS code can speed up downloading, parsing, and execution time.

Leverage Browser Caching

Specify an expiration for cacheable resources to at least one week in the future. In this way, data is not being downloaded over and over again on each visit to the site and instead the browser is retrieving that data locally.

Eliminate Render Blocking

The site will be designed to defer any JS and CSS resources that are not necessary to display above the fold content. We will keep in mind to avoid a FOUC up (Flash Of Unstyled Content).

Wow! Factor

As a value added feature, we will add an interesting element that would help draw in and keep the interest of the visitor. (ex: animation, slide-show, etc.)