

Agri-Energy Connect Prototype

ST10383430

A functional ASP.NET Core MVC prototype demonstrating core features of the Agri-Energy Connect Platform, using a local SQL Server LocalDB database.

Prerequisites

Before you begin, ensure you have:

- Operating System**: Windows 10 or later
- Development Tools**:
- [Visual Studio 2022](https://visualstudio.microsoft.com/) (or later) with **ASP.NET and web development** workload
- [.NET 7.0 SDK](https://dotnet.microsoft.com/download/dotnet/7.0)
- **Database**:
- SQL Server Express **LocalDB** (installed with Visual Studio)
- **Git** (optional, for cloning the repo)

Setup & Configuration

1. Clone the repository

git clone https:

cd AgriEnergyConnect

2. Open the solution

- Double-click **AgriEnergyConnect.sln** in Visual Studio.

3. Verify the connection string

In appsettings.json, ensure your local DB path is correct:

```
"ConnectionStrings": {  
  "DefaultConnection":  
    "Server=(localdb)\\mssqllocaldb;Database=AgriEnergyDB;Trusted_Connection=True;MultipleActiveResultSets=true"  
}
```

4. Restore NuGet packages

- In Visual Studio: **Build** → **Restore NuGet Packages**
- Or via CLI: dotnet restore

5. Apply Entity Framework migrations

In **Package Manager Console** (Tools → NuGet Package Manager):

Add-Migration InitialCreate

Update-Database

This will create the AgriEnergyDB database, seed **Farmer** and **Employee** roles, plus two demo users and sample products.

Running the Application

1. Press **F5** (or **Ctrl+F5**) in Visual Studio to start with IIS Express.
2. The app will open in your default browser at <https://localhost:5001/> (or similar).

Demo Accounts

Role	Email	Password
Employee	employee@demo.com	Demo@1234
Farmer	farmer@demo.com	Demo@1234

Use **Employee** to add/view/filter any farmer's data.

Use **Farmer** to view and add your own products.

Core Features

1. Authentication & Roles

- Secure login/logout via ASP.NET Identity
- Two roles: **Farmer** and **Employee**

2. Farmer Functionality

- **View** your own product listings
- **Add** new products (name, category, production date)

3. Employee Functionality

- **Create** new farmer profiles
- **List** all farmers
- **View & filter** any farmer's products by date range or category

4. Data Validation & Error Handling

- Server-side validation on all forms
- Friendly error messages and validation summaries

5. Responsive UI

- Bootstrap-based layout for desktop, tablet, and mobile
- Consistent styling with a green & cyan colour palette

Development Notes

- **Adding a new migration**

dotnet ef migrations add YourMigrationName

dotnet ef database update

- **Changing the colour theme**
 - Edit wwwroot/css/site.css: modify .bg-green, .text-cyan, or .btn-primary rules.
- **Extending user roles**
 - In Program.cs, add new roles via RoleManager during startup.

Further Reading

- [ASP.NET Core MVC Documentation](#)
- [Entity Framework Core Docs](#)
- Bootstrap 5 Getting Started