

SECURE



 **ADAPT***CITY***PLAN**

Professional grid planning
.easy .user-friendly .efficient

The evolution of grid planning

The structure of electricity grids is becoming increasingly complex and requires an efficient grid planning tool. We have the solution: Adaptricity.Plan is your starting point on the way to intelligent distribution grid planning.



Challenges in grid planning



Complex

Even specialists have a hard time: with conventional grid planning software it is easy to get lost in menus and settings. This leads to uncertainties and delays in the planning process.



Isolated

Once saved in GIS, the manual transfer into the calculation software or the transfer of results can cause inconsistencies and time-consuming errors.



In the Past

Conventional software is often already outdated when you purchase it. Expensive updates and non-transparent modules force customers to make hasty decisions without having time to consider whether they really fulfil their needs.



Questions

Without a manual, most users who do not use their grid planning program every day struggle to navigate the software. Professional assistance from a support team is either non-existent or is only available at additional cost.

The future with Adaptricity.Plan



Easy

Adaptricity.Plan is a self-explanatory out-of-the-box solution immediately ready for operation. You don't need to spend time on lengthy configuration processes or training sessions.



Integrated

Manage the grid model in one place: your GIS. Interfaces ensure you're always working with the most current data. You can also automate grid connection requests directly in the GIS and run Adaptricity.Plan invisibly in the background.



State-of-the-art

Thanks to cutting-edge Cloud technology, you can work from anywhere with the latest software. You profit from continuing advancements in technology and constant compliance with new regulatory requirements.



Answers

Data is input by following an intuitive process. Users can focus on answering specific technical questions and are provided with direct support and assistance on the displayed screen by mouse-click.

Fast and reliable evaluation of your grid according to current standards

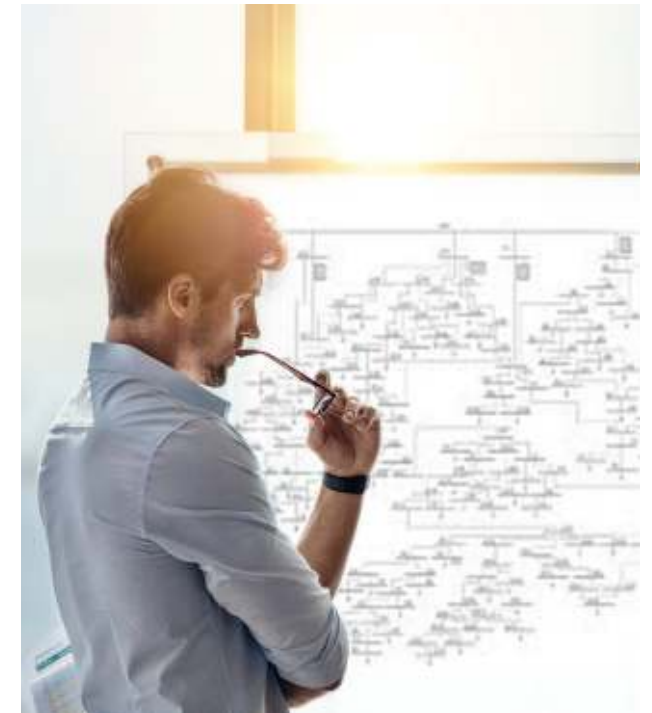
Adaptricity.Plan

Efficient and investment-secure planning for the future

Adaptricity.Plan is the first completely cloud-based software for statistical grid planning and calculations. It focuses on user-friendliness, straightforward deployment and the future security of investment.

Adaptricity.Plan promises fast and precise results as well as optimum assistance for your daily grid planning requirements.

Adaptricity.Plan allows you to evaluate connection requests within minutes in accordance with the applicable technical regulations. The software can also evaluate the current development status of the distribution grid and plan ways of integrating new systems.



You calculate your grid based on your current grid model

The interface to your GIS platform is the key to the direct use of your existing grid model. Adaptricity.Plan allows you to concentrate on your core business: Your grid. Straightforward and guided processes guarantee efficient work-flows and lean processing.

This automatically results in higher productivity which helps to mitigate the problem of a shortage of skilled professionals.

Adaptricity.Plan ensures 100% compatibility with more powerful data-driven grid planning and grid analysis methods in the future. It is based on the same platform as its sister product Adaptricity.Sim, which supports extensive time-series calculations. It can be upgraded at any time. This makes Adaptricity.Plan a safe investment for the future which not only meets today's requirements but guarantees the seamless compatibility with future developments.



Adaptricity.Plan: How it works

1. Grid

Select the grid you want to work on

2. New request

Start the evaluation of the connection request here

3. Connection point

Click on your connection in the grid to select it

4. Device parameters

Transfer the device parameters from the connection request

5. Evaluate

You can evaluate your connection request here

6. Analysis

The results are calculated within seconds and are available as a report.

Status Tracking

Distinguish between requests that have been submitted, approved, or implemented

Display options

Show or hide labels and visualisations

Menu navigation

All essential functions are accessible with two clicks

Grid simulation

Choose between GIS modelling on the map and schematic diagrams

At a glance

Simple colour system for Analysis purposes

Help and support

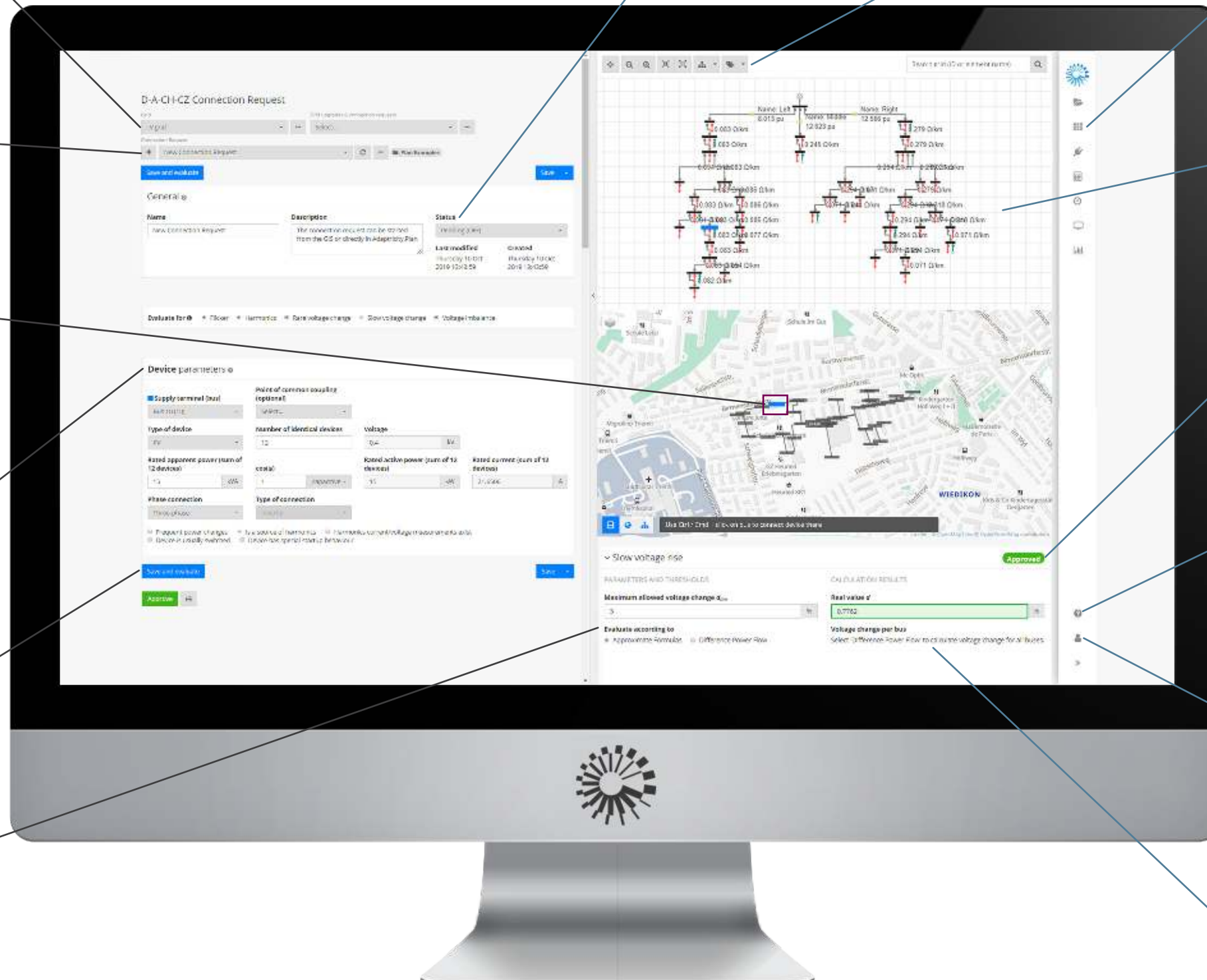
Detailed assistance and immediate access to the Adaptricity support team.

Teams

Manage your team and assign user authorisations and permissions

Actions and recommendations

Explanations, comments and recommendations on the results



Support whenever you need it

We will answer any technical queries within one business day - and that's a promise!

We focus on your needs and are happy to answer any questions you have on grid planning.

To put it simply: We are here to help you.

How to...

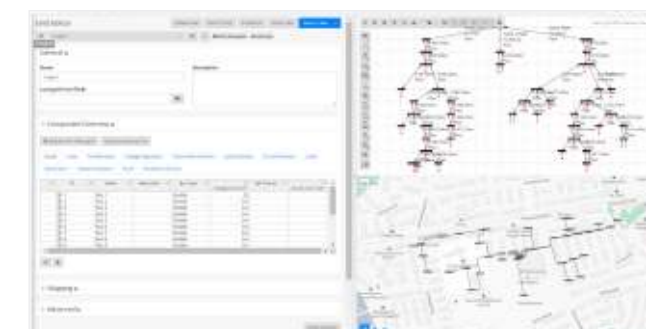
Evaluate the compliance of your connection request with DACHCZ or VDE AR-N in just 3 minutes

Step 1

Import your grid model

Our interfaces to other software systems such as GIS platforms enable you to directly import the current grid model. You can save technical parameters for your grid elements which are then used to make the model fit for evaluating connection requests.

New interfaces are added continuously. If required, a grid section can also be drawn directly, quickly, and easily with the grid editor.



Step 2

Configure the connection request

Position the new system you want to connect in your grid and enter the required parameters. The software then navigates you through the steps in the relevant input fields, depending on the grid element you want to integrate. This process guarantees maximum process quality.

If necessary, you can enter flicker and harmonic data to model the harmonic grid distortion of the system.

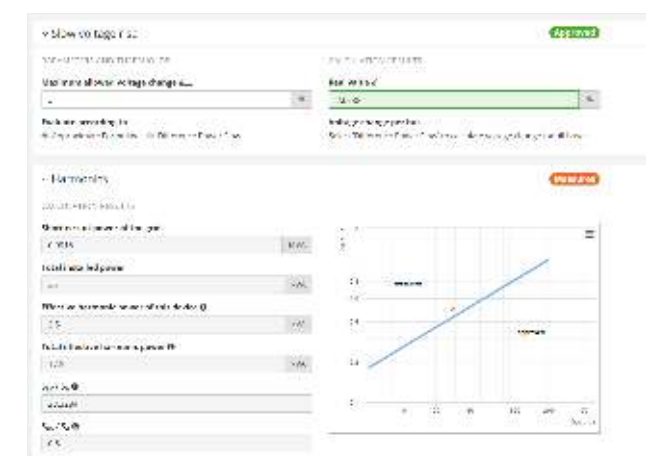


Step 3

Evaluate and document the request

Once all the data has been systematically entered, one click is enough to evaluate all the criteria. You will be notified about problematic aspects and shown how the calculated value will be evaluated for all relevant data when compared to the limit value.

You can print a report directly to document the connection request evaluation in accordance with legal regulations and to provide it to other professional departments.



Functions in detail

Connection requests

Evaluation of connection requests in compliance with DACHCZ or VDE AR-N

On the Adaptricity platform, you can conveniently evaluate connection requests for new electric appliances as well as distributed generators in accordance with the current grid connection regulations – whether that be traditional DACHCZ regulations (regarding voltage fluctuations, flicker and harmonics) or newer connection regulations according to VDE AR-N 4100, 4105 and 4110 for low and medium voltage connections.

All relevant grid planning data is input via a clear user-friendly interface for the subsequent calculations. The ensuing comprehensive evaluation provides detailed insights into the performed grid calculations as well as full documentation of the grid operator's decision regarding specific grid connection requests. Thanks to regular software updates of the Adaptricity grid analytics platform, you can keep pace with new or changing grid code requirements and continue to evaluate your grid connection requests efficiently, with full legal compliance, using an easy, clearly-structured process.



Protection calculations

Medium and low voltage protection calculations done quickly and efficiently

With the Adaptricity platform, protection calculations are performed quickly and efficiently. The tedious search for fuse characteristics, the imprecise estimation of selectivity and the manual creation of selective tripping schedules are a thing of the past.

With a computable grid model, including fuses and protection devices, all important protection calculations can be made conveniently with a single click of a button: whether its grounding conditions in low-voltage grids, selectivity diagrams of sub-grids and transformer stations, or the automatic adjustment of distance protection parameters in medium-voltage grids – with Adaptricity.Plan you get all the relevant results in a clear easy-to-understand visual format. Security assessments according to (N-1) criteria are also available.



Extended Grid Stress Test

Distribution grid stress test for different load and generation scenarios

Conventional grid stress tests are based on hypothetical grid situations that never occur in practice. Adaptricity has developed an extended version of its existing grid stress test, such that various realistic situations can be simulated and assessed automatically for a wide range of user-defined load and generation settings.

As a result, you no longer get theoretical maximum grid loading values for hypothetical worst-case situations, but realistic probability data of overvoltage and undervoltage events and their impacts on the distribution grid. In order to exclude the impacts of overly optimistic or pessimistic assumptions on grid loading, the Adaptricity platform calculates the impacts for various grid conditions in order to exclude random errors and outliers. Using our grid stress methodology, you can obtain plausible and robust answers to questions like how much e-mobility a given distribution grid area can support – even without the need for actual grid measurement data.



Grid integration toolbox

Evaluation of grid integration measures

Is a new grid installation, large consumer or distributed generator, stressing and perhaps even potentially overloading your distribution grid? As a grid operator, you are typically legally obliged to take appropriate action – be it conventional grid reinforcement, e.g. installation of additional cable and transformer capacity, or smart non-wire alternatives such as voltage support by RES generators, demand response, controllable transformers and voltage regulators or distributed storage. Evaluating all these different grid upgrade options renders grid planning more complex.

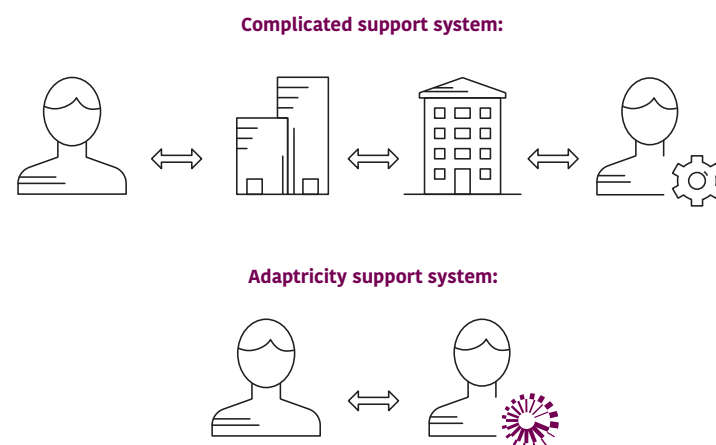
Adaptricity's grid integration toolbox allows you to streamline the evaluation of the various grid upgrade options based on your specific requirements and identify the most technically feasible and economically viable grid upgrade option for your specific grid situation.



Your Adaptricity benefits at a glance

Adaptricity: your expert partner

Only a professional direct-sales consultant with technical experience can ensure your company receives comprehensive advice and guidance. With Adaptricity, we guarantee you will get the support you need. Our product development closely reflects market demands, and your requirements are integrated directly into future development.



Compatible with other Adaptricity tools

Adaptricity.Plan is based on the same platform as Adaptricity's other tools. You can upgrade to a time-series based analysis and planning method at any time, even during the current license period.

Multi-language support

Work in the language that you feel most comfortable with. The choice is yours because Adaptricity.Plan is designed for multi-language use. User interfaces and help texts are already available in German and English and new languages will be continually added. Support by phone is also available in Italian and French.

Specifications

Infrastructure		
Server location	Germany, Switzerland, other locations may be possible upon request	
Data transfer	SSL-encrypted data transfer between server and user interface	
Login	Two levels: Instance login by HTTP BasicAuth; individual user login	
Backup cycle	Weekly, one-week retention time	
Product specifications		
Version of DACHCZ regulations (regulations in Switzerland to evaluate grid harmonics)	2007	
Supported VDE (German Association for Electrical, Electronic & Information Technologies) application regulations	VDE AR-N 4100, 4105, 4110 (2018)	
Short-circuit calculation method	EN 60909-0 (VDE 0102)	
Load flow calculation method	Newton-Raphson, Gauss-Seidel, sweeping algorithm (voltage/current iteration)	
Web interface	REST-API, format for data transfer: JSON	
Integrated grid model interfaces	Native XML format, UCTE, Matpower, PSS/E, IEEE Common Data Format	
Grid model interfaces with previous initial project	PowerFactory, ENTSO-E CIM, CDE, GEONIS, LIDS7, AutoDesk Map3D, G!NIUS (upgraded continuously)	
Maximum number of grid nodes	2,500 per network model, or per sub-grid for grid splitting	
Maximum number of branches	8,000	
Maximum number of grid feeds	1	
Grid element database	Cable, transformer, and fuse data (descriptive and electrical parameters)	
Version control	Versioning of selected data models	
Documentation	Comprehensive support integrated into the software	
Supported browsers	Optimised for chromium-based browsers (Chrome, Iron); additionally Edge, IE11	
Languages available	German, English	
Licenses		
	Enterprise license	Individual license
Maximum number of teams	50	1
Maximum number of users	500	1
Create new users/teams	yes	no
Admin interface	yes	no
Service		
Customised developments	Available on request	
Response time to support queries	Within one business day	
Software updates	Usually every 2 weeks	
Development cycle	Upgrades or new models are usually released every 8 weeks. Individual functions can be reserved for Adaptricity.Sim / Adaptricity.Mon.	

Instant availability, fast installation, immediate benefits – Adaptricity.Plan

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